

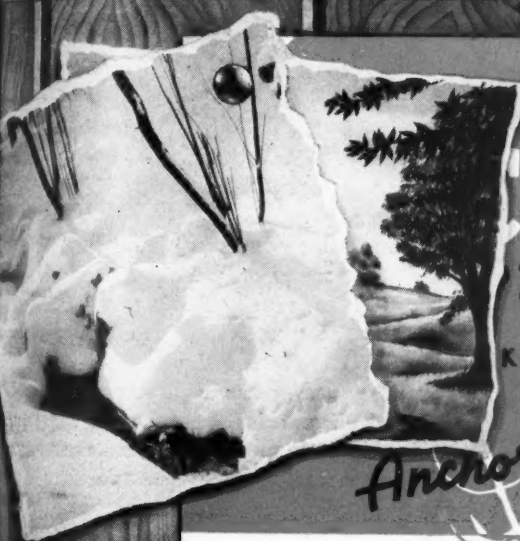
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BUTANE-PROPANE

RECOGNIZED AUTHORITY OF THE
REFINED PETROLEUM GAS INDUSTRY

News



ANCHOR PROPANE

OKLAHOMA

Anchorgas

In Season . . . Any Season

Let's sell Butane-Propane the year 'round. Anchorgas
is a desirable, economical fuel and has many summer-
time as well as winter uses.

ANCHOR

PETROLEUM COMPANY
• TULSA, OKLAHOMA

MAY, 1945



MINIMUM SEAM AREA —what does that mean to me?

Plenty, Mr. L-P Gas Distributor! It means getting a better cylinder—a cylinder that's designed for longer life.

In the entire construction of Hackney L-P cylinders there is only a *single* body weld—controlled to assure uniformity and maximum strength. The two shells are entirely seamless, pressing and drawing them to shape, the Hackney process is used—assuring uniform side-wall thickness and elimination of defective material. Heat treating in automatic time- and temperature-controlled furnaces, after complete fabrication, assure proper physical qualities of both steel and weld.

In designing and manufacturing Hackney cylinders, a proper balance has been obtained between light weight and adequate strength. As a result, they have won the preference in the industry.

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Pressed Steel Tank Company

Manufacturers of Hackney Products

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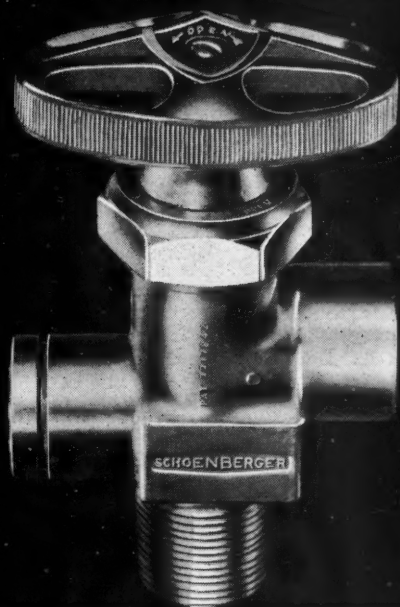
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

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THE NEW SCHOENBERGER

Diaphragm Packless Cylinder Valve

WITH PRESSURE EQUALIZER...



• The Pressure Equalizer is an exclusive and most important feature. *It absolutely prevents the stem from sticking or "checking shut" under any operating condition.* This important improvement will be appreciated by engineers and operators as a vital contribution to the L-P Industry.

Full information is yours for the asking.

We Specialize in Valves and Accessories
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8810 HARVARD AVENUE

CLEVELAND 5, OHIO



BUTANE-PROPANE *News*



Reg. U. S. Pat. Off.

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LETTERS

Have you service or operating problems? Submit them to us and our technical department will endeavor to help you.—Ed.

Gentlemen:

We would like to know if you have any large placard available of the "Quiz" in the February issue? We would like to get one to put in our store for display. If they are not available we would like permission to have some painted to use for this purpose.

C. H. J.

Florida

These "Quiz" pages are not available in any other form than as printed. We are glad to grant you the privilege of reproducing them for your bulletin board. It is requested only that your reproduction carry a credit line for BUTANE-PROPANE News.—Ed.

Gentlemen:

In C. C. Turner's article on poultry brooding, Chapter 7, he speaks of delousing with gas torches.

Can you give us more information on that subject, as to how it is done and what kind of torches are used?

W. A. S.

Missouri

The use of torches has been looked at somewhat askance by poultry raisers because of difficulties which have been experienced with torches using liquid fuel. One danger of such torches is that they may not completely vaporize the fuel, and they have been known to throw out some liquid and unburned fuel, which has caused fires. In the LP-Gas torch this danger is, of course, eliminated.

Naturally, some common sense must be used in handling a torch around a poultry house.

Easily ignited materials such as cobwebs and dry litter should first be removed. Then if the house has recently been treated with any oil or other delousing chemical a torch should not be used. As the lice and germs are microscopic, it is not necessary to play the torch on a spot for any length of time. The method employed is to pass along rapidly with the flame, not holding it steadily on any one spot.

For the disinfecting of metal food containers and the metal parts of brooders nothing can beat a torch. The operation is one of seconds and nothing dangerous is left, whereas the use of poisons or oil-base disinfectants may create either a dangerous condition, or contaminate the food so that the poultry will not eat it.—Ed.

Gentlemen:

We have just installed an additional 15,000 gallon propane storage tank alongside of the one we have had. We are desirous of hooking up this new tank to the same piping which leads from the old tank to the compressor, and also insert a shut-off valve in the bottom of the old tank, which we neglected when this tank was installed four years ago. Therefore, we will appreciate your giving us the answers to the following problems, if possible.

1. Is it necessary to purge the old tank completely of all vapors before installing a shut-off valve, and working on the 2-in. piping from this storage tank to the compressor?

2. If this is necessary, what is the proper procedure for ridding the tank of all vapors?

3. In pumping out the liquids during the emptying process, we discovered a seepage of oil around the sight gage and other connections of the pump. Can you tell us what this oil seepage is?

C. H.

Florida

It is not necessary to purge the tank to make your new connections as long as you use bolted or screwed connections. If you in-

tend to weld new connections into the tank, it should be thoroughly purged and checked for vapors before any welding is done.

It is assumed that you have a flange or screwed connection in the bottom of the tank for your present outlet piping. Remove all liquid from the tank and relieve the remaining gas pressure by venting from a top connection until the pressure is reduced to "0". Then disconnect your present piping and install your shut-off valve. If you intend to weld your piping, do your welding before connecting to the tank or live lines and make your final tie-ins with steel flanges or steel unions.

Naturally, while you are doing this work, care should be taken to prevent any source of ignition in near proximity of the work.

We do not know what the oil leaks indicate excepting that your fittings are not made up tightly. It is suggested that you disconnect them and thoroughly clean the threads and make them up with a good thread compound. Often there is a slight amount of absorption of oil in LP-Gas that will not evaporate at a leaky point, leaving a stain.—Ed.

Gentlemen:

I would like for you to tell me how many Btu. in a gallon of butane-propane mixture (40% propane, 60% butane). Also how many there are in a gallon of straight propane.

D. W. B.

Mississippi

Butane contains 103,703 Btu. per gallon and propane 91,757 Btu. per gallon. A 40—60 mixture contains $.40 \times 91,757 + .60 \times 103,703$, which equals 98,925 Btu. per gallon.—Ed.

Gentlemen:

Will you please send me a list of all towns in Texas which are not piped for natural gas?

C. C.

Texas

We can only supply the names of towns whose populations exceed 2500 which do not have any form of gas service. These towns and their populations are given below:

Alpine, 3,836; Brackettville, 2,653; Cotulla, 3,633; Fredericksburg, 3,544; Lampasas, 3,426; Llano, 2,658; Pearsall, 3,164; San Saba, 2,927, and Sonora, 2,528.—Ed.

Gentlemen:

We desire to erect a plant for handling liquefied petroleum gas.

Can you supply us with information on latest plans of construction and materials? Any material pertaining to this subject or sources of information will be appreciated.

D. J. P.

Pennsylvania

I suggest that you get in touch with Parkhill-Wade, consulting and construction engineers, who specialize in building such plants as you refer to. Their address is: 1625 S. Alameda St., Los Angeles.

You will also find this subject treated at considerable length in the Handbook Butane-Propane Gases which you ordered.—Ed.

Gentlemen:

Your excellent "Handbook Butane-Propane Gases" describes natural gasoline plants of the absorption type as the only ones of commercial importance.

In the interest of a friend, on whose large farm is located a new gas well producing largely propane and some oil, I am writing to you in the hope that you might be able to suggest where I might obtain data on the design of a small, practical extraction plant to provide gasoline for the farm tractors and other machinery.

I would also appreciate your comments on the economic practicability of such an installation.

A. N. J.

Ohio

There is no practical method of extracting gasoline and liquefied petroleum gases on a small scale.

Even though the oil may be bubbling out of the ground, it is still cheaper to buy your engine fuel on the open market than to rig up for it.—Ed.

• BUTANE-PROPANE News welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed.—Editor.

BUTANE-PROPANE News

COMMENT

A WAR veteran returning to his job is to be "reemployed at the level to which he would have been entitled if there had been no break in his service with the company," according to a National War Labor Board's interpretation of the Selective Training and Service Act of 1940.

Have you remembered this?

An Oklahoma dealer has 300 definite orders to fill immediately upon easing of restrictions.

Is this an isolated case? More likely, it approaches the typical.

Multiply 300 by the number of liquefied petroleum gas dealers in this country and something of the industry postwar potential may be gleaned.

The worst and most conspicuous accidents in the industry have concerned transport trucks. Sometimes these have been due to careless or inexperienced drivers, but frequently drivers of other vehicles have been solely to blame. However, we got the blame—and the publicity.

Truck drivers always should check brakes, tires and equipment before starting on a run—and then remember the other fellow is likely to act in the most unreasonable and unexpected manner.

Super-service at gasoline stations may soon take on a new aspect. They may become shopping centers, handling a host of products.

Two major oil companies "are planning to handle such heavy items as refrigerators, stoves, ironers, console

radios, and washing machines." Warehoused by the companies, the products will be delivered in company trucks to dealers for display and sale.

Competition?

A new insulating material, "Santocal," said to be twice as efficient as cork and weighing only three pounds a cubic foot has been announced. It is a derivative of silica and pours and looks like finely ground snow.

It is claimed its use will make possible thin-walled, postwar refrigerators with 40% more storage space than present models of the same size.

It is not easy to believe, but we have seen the statement often, that 97% of the nation's business organizations have thus far neglected to establish postwar plans to train salesmen to sell goods.

What have you done about it?

April quotas on passenger car tires were cut 600,000. But truck and tractor-implement quotas were upped, showing them to be more vital.

Rubber is still the shortest, essential product. More rubber, less butane.

If you can walk into the office of an architect or builder and give him pointers on kitchen ventilation in that newly-proposed home you hope to make all-gas, your sale is half made.

Prospective home owners will listen to you, too.

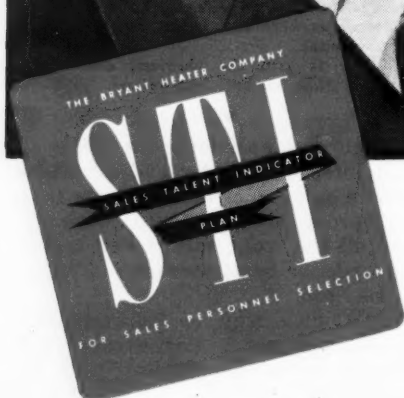
It's a slick way to lick competition—in advance. For greater familiarity with this subject turn to Page 35.

By Ed.



WHEN HE SAYS

I think



Ask the nearest distributor for complete details on how the Bryant Sales Talent Indicator Plan is made available for your use—or write The Bryant Heater Company, 17825 St. Clair Ave., Cleveland 10, Ohio. One of the Dresser Industries.

SAYS
k
I can sell

GAS HEATING!

Be ready to check his ability through
the Bryant Sales Talent Indicator Plan

It has been in careful preparation for many months . . . the Bryant Sales Talent Indicator Plan that now is ready to help guide you in the selection of your gas heating sales staff!

Created by the famed Personnel Research Institute of Western Reserve University, under the direction of Dr. Jay L. Otis, this plan is specifically designed to uncover the men best fitted to sell gas heating. It was built through preliminary testing of men actually engaged in this type of work, thus is a positive aid in pointing out the applicants who offer the best possibilities of duplicating the performance of the leaders. It can assist in making your postwar sales organization the most efficient and productive that you ever sent out to get the names of gas heating prospects on the dotted line!

Not limiting a final judgment to any one form of test, it checks applicants from all possible approaches. A *weighted application blank* produces basic employment data. A *regulated interview and rating chart* reveals personal characteristics and work history. A *salesman classification test* determines the applicant's trainability. Then, *the Bryant Sales Talent Indicator*, key test of the plan,

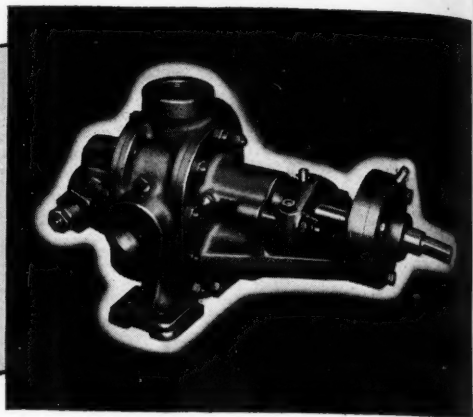
indicates in 20 minutes whether the applicant has the sales characteristics required in a successful gas heating salesman, or is capable enough to warrant training for the job. And, if your type of selling also requires *mechanical aptitude*, there is a supplementary test to measure this ability in the applicant.

Plan now to learn the details of this tested sales personnel selection plan, and how it can help you. Set a date for the Bryant representative to make a personal presentation in your office. You will find the Bryant Sales Talent Indicator Plan a definite contribution to a more productive house heating sales force for you!

bryant
GAS
HEATING



*Users report
Millions of
Gallons
Pumped...*



WITHOUT ONE CENT OF UPKEEP COST

*Write for
Bulletin
5-57*

It gives complete information on the Roper simplified and compact design... illustrates and describes all parts... includes a dimensional drawing... and other detailed information.

ROPER

Rotary Pumps



GEO. D. ROPER CORP., ROCKFORD, ILLINOIS

From Oklahoma, Texas, Kansas, Florida... wherever Butane pumps are used... the reports are the same regarding Roper Pumps... *Excellent* performance with upkeep or repair costs either nothing or practically nothing.

Simple design, expert workmanship and 87 years of experience in building pumps adds up to just this... a pump that users swear by... a pump that does the job speedily, quietly, economically.

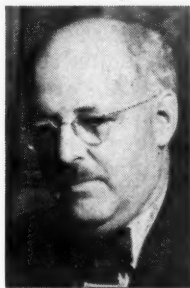
The Roper Butane Pump is a complete unit in itself with the bearing bracket, ball bearing and relief valve all built in. It's easier and quicker to install in a small space because there are no cumbersome bases, brackets or bearings to take up space. All parts are readily accessible for quick servicing.

MAINLY BEYOND THE MAINS

By ELLIOTT TAYLOR, Washington Editor

\$64 Question

The briskness and alacrity with which the Colorado liquefied gas dealers got together, formed an organization, proceeded with the business at hand and disposed of it to the apparent satisfaction of one and all, just goes to show what can be done by an association when a few of its members know what they are shooting at and how to take a good aim on the target.



ELLIOTT TAYLOR

It gives the lie to the defeatist idea which is sometimes expressed by the tired souls of the industry who think nothing can be done about national association affairs, so what's the use of trying. We have long contended and we remain convinced that there is nothing peculiar about the liquefied gas industry that makes it incapable of supporting a strong trade organization; it has no obscure, wasting disease that dooms its operators to eternal indifference to the benefits that can be derived from association membership.

Briefly, the Colorado story is a short-short. A group of dealers got together last winter, formed a state association in January, and drew up for presentation to the state legislature a model liquefied gas bill (based on NBFU Pamphlet 58). The bill was passed and signed by the governor to become a Colorado law on Feb. 28, 1945.

It is true that such an activity required leadership during the organization stages, furnished in this instance by Harry Torbit and backed by his committee of dealers.

But we believe the group was able to get together, stick together and work together primarily because its members had a specific and definite objective in view. It was an objective that every dealer in the industry could see as being beneficial to his business, and to the future of the industry, which would inevitably affect his business.

There is no reason why the lessons that can be learned from this inspiring Colorado episode cannot be translated into larger terms of benefit to the national Liquefied Petroleum Gas Association.

It is hardly open to question now, even among those who are

strong supporters of the LPGA, that it needs some kind of benefits and it needs them now! It is an alarming paradox that right at the time when interest and talk about association affairs is at an all-time high, the morale and psychological status of the LPGA is at an all-time low.

Successive boards of directors have deliberated, debated, side-stepped and stalled until those who have had the advancement of the industry at heart have wrung their hands in despair. Plans have been proposed and abandoned, and very few of them have been considered on their merits. The one question that has to be settled before anything ever can be done to make the LPGA into a real trade association has been ignored to the extent that it is considered heresy to even ask it in public.

That question is simply this: Shall the association be controlled by the majority vote of the individual members, or shall it be controlled by company votes, weighted in proportion to the amount paid in annual dues? Only one system is democratic, only one system can give the rank and file of dealers and distributors any assurance that their interests will be represented or that their voices will be heard.

We are well aware of the arguments in favor of the present constitution and by-laws of the LPGA. They are the same arguments that are presented by every group of leaders who think only they know what is good for their fellowmen. But the dealers and even many of the distribu-

tors argue—with what sounds to us like superlative horse sense—that if they can't be trusted to have a full voice in association affairs they shouldn't be trusted to have any voice at all. We have always felt that there is something ludicrous and undignified in any man in an assemblage having one vote more or one vote less than his fellow.

This is the top ranking question that the executive board has to answer in its Chicago meeting, scheduled for late in April. The answer given to that one will answer still another question—does the board want to make the present LPGA into a truly representative national organization, giving equal rights to the hundreds of operators who would be asked to become members, as well as to the few who are already enrolled?

Right at present, butane and propane dealers—and we mean dealers and distributors, not refiners or manufacturers of gas appliances and equipment—appear to be about evenly divided between two schools of thought. One group feels that the present LPGA may yet be reorganized into an effective instrument of cooperative endeavor; the other school is convinced that only a brand new start under a new organization banner will set the industry marching forward in a true united front.

We believe that the advantages of attempting to revive and resuscitate the LPGA still appear to outweigh the obvious and

sizable disadvantages of the undertaking. If the executive board is willing to recognize its first responsibility, that of remaking the organization into a democratically controlled gas association, we are convinced that all of the other benefits of new organization can be expected to follow in due course, and without dividing the liquefied gas house against itself. The establishment of a rival association would inevitably result in that undesirable situation, at least for a temporary period.

When, as and if the executive board answers the \$64 question, it must still take up the myriad other matters that soon have to be settled. A few of these have been suggested to us by correspondants who have written in from every section of the country. They are well worth calling to the attention of the board, as they represent the honest attempts of individuals who discuss association shortcomings only to urge improvement in that organization.

Some of the more controversial ones, which we specifically present without recommendations, are as follows:

1. Should the association appoint a new executive secretary or should action be delayed until Frank Fetherston returns from army service?
2. Should the close affiliation with the Compressed Gas Manufacturers Association be continued?
3. Should a membership drive be launched with a competent and adequately paid expert at its head?

4. Should the offices of the LPGA be continued in New York or should they be moved elsewhere?

5. Should the association maintain a Washington office, primarily as a political observation post?

6. Should the LPGA affiliate with the American Gas Association and other organizations?

7. Should dues be raised to finance expanded activity or should they be lowered to attract more members, increasing thereby the net revenue of the association?

8. Should liquefied gas producers be regular or associate members?

9. Should appliance and equipment manufacturers be regular or associate members?

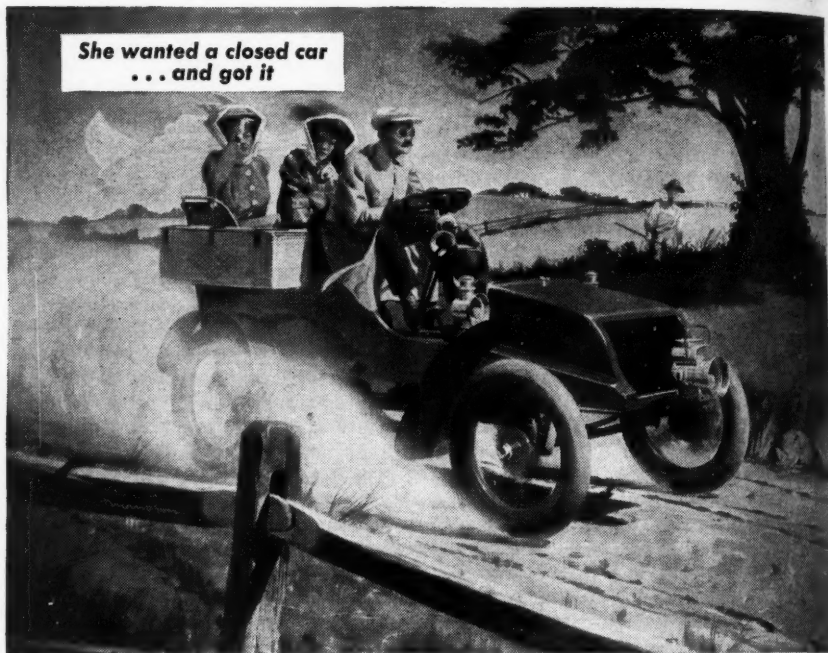
10. What other changes in the association by-laws are required?

These ten questions are only indicative. They do not in any sense encompass all of the problems that beset the executive board, or the reorganization committee, but, out of the 10 we can't for the life of us pick out a single one that the association can afford to ignore any longer.

The Colorado Association is successful in its limited objective because that objective was clearly understood by all who were asked to help attain it. The methods employed were simple and the procedure was democratic, dignified and honest.

If the reorganizers of the Liquefied Petroleum Gas Association will allow no less worthy qualities to impinge their labors, the results of their endeavors may well rise to the same high plane of achievement.

"What woman *wills*... will be"



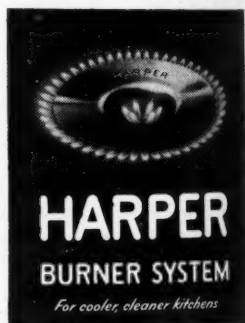
98% want 2-in-1 Top Burners

WHEN WOMEN became "fed up" with the discomfort of open cars, wise manufacturers concentrated on closed models. And today, 98% of modern housewives are dissatisfied with antiquated top burners. They want a *dual purpose* burner... giving one heat for frying and to start foods boiling, and another separate heat to maintain the cooking.

Only the Harper Burner System does this. Each burner is actually 2 burners in 1... both operated and controlled by a single handle. The small, inner *cooking* burner can be used entirely independently of the outer *starting* burner. This insures just the right heat for every type of top burner cooking.

Thus, the Harper Burner System is the top burner answer in the AGA campaign of appliance improvement to augment the position of gas as the ideal cooking fuel.

Copr. 1945, Harper-Wyman Co.

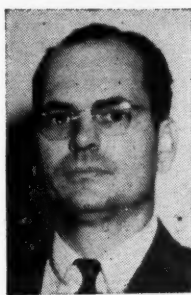


On next page
WHAT USERS SAY

LPGA Sectional Groups Vote New Men Into Office



H. E. THOMAS



SELWYN TURNER



CHAS. RUSSELL



ERNEST FANNIN

Sectional Chairmen

NEW OFFICERS of the Liquefied Petroleum Gas Association, elected for 1945 at Chicago on April 24, are:

Ernest Fannin, president.

H. K. Strickler, 1st vice president.

Chas. O. Russell, 2nd vice president.

This information was received just as this issue of Butane News was going to press.

THE new executive board of the Liquefied Petroleum Gas Association has recently been elected by the membership.

At the same time there was reported to the Association the election of chairmen and vice chairmen of the four Sections of the Association.

By amendment to the constitution and by-laws of the association last year, sectional officers are now elected by ballot.

The new sectional officers are as follows:

Eastern Section:

H. Emerson Thomas, Fuelite Natural Gas Co., Lexington, Mass., chairman.

R. E. Forsberg, Country Home Gas Service, Inc., Suffern, N. Y., vice chairman.

Southern Section:

Selwyn Turner, National Butane Gas Co., Mobile, Ala., chairman.

B. T. Harris, Butane Gas Co., Inc., Little Rock, Ark., vice chairman.

Midwest Section:

Charles O. Russell, Thermogas Co., Des Moines, Iowa, chairman.

Lee H. Barker, Wisconsin Rapids Gas Co., Wisconsin Rapids, Wis., vice chairman.

Pacific Coast Section:

Ernest Fannin, Fannin's Gas & Equipment Co., Phoenix, Ariz., chairman.

F. F. Hampson, Western Gas and



F. F. HAMPSON



B. T. HARRIS



R. E. FORSBERG



LEE BARKER

Sectional Vice Chairmen

Power Co., Yakima, Wash., vice chairman.

The 24 directors who will serve on the executive board for 1945 are given below. The first meeting of the new board was scheduled to be held April 24-25, at which time officers for 1945 will be elected.

Executive Board:

- L. Abramson, Jr., Petrolane Gas Corp., New Orleans.
- G. W. Bach, Skelly Oil Co., Kansas City.
- Lee H. Barker, Wisconsin Rapids Gas Co., Wisconsin Rapids, Wis.
- F. B. Boice, Shell Oil Co., Inc., New York City.
- R. S. Bowers, Standard Oil Co. of Calif., San Francisco.
- G. L. Brennan, Warren Petroleum Corp., Tulsa, Okla.
- G. A. Burrell, Atlantic States Gas Co., New York City.
- Ernest Fannin, Fannin's Gas & Equipment Co., Phoenix, Ariz.
- R. E. Forsberg, Country Home Gas Service, Inc., Suffern, N. Y.
- F. F. Hampson, Western Gas and

Power Co., Yakima, Wash.

- B. T. Harris, Butane Gas Co., Inc., Little Rock, Ark.
- K. H. Koach, Green's Fuel, Inc., Sarasota, Fla.
- J. Woodward Martin, Lone Star Gas Co., Dallas, Texas.
- Herman Merker, Pressed Steel Tank Co., Milwaukee, Wis.
- Walter H. Miller, Hamler Boiler & Tank Co., Chicago.
- Ellsworth L. Mills, The Bastian-Blessing Co., Chicago.
- Walter A. Naumer, Carbide & Carbon Chemicals Corp., New York City.
- K. W. Rugh, Phillips Petroleum Co., Bartlesville, Okla.
- Charles O. Russell, Thermogas Co., Des Moines, Iowa.
- E. Carl Sorby, George D. Roper Corp., Rockford, Ill.
- H. K. Strickler, The Protane Corp., Erie, Pa.
- H. Emerson Thomas, Fuelite Natural Gas Co., Lexington, Mass.
- Selwyn Turner, National Butane Gas Co., Mobile, Ala.
- W. F. Verkamp, Verkamp Corp., Cincinnati.

What Kind of Insurance Does a Dealer Need?

By D. C. COLLYER

O'Rourke and Royer, Inc., Denver, Colorado

In Two Parts—Part I

DEALERS in liquefied petroleum gases, as is the case with all businessmen, have a legal liability to pay for all damages to persons or property caused by the negligence of the dealer. The laws of negligence go back through the English common law to the laws and customs of earliest times. A few of these laws are written and are known as statute law. Most of them are a part of the common law, which contains such obvious truths that it is unnecessary for legislative bodies to affirm them.

In many instances the damage an article can do is, when measured in dollars, far out of proportion to its selling price or to the amount of profit made in the merchandising of it. For example, a fatality caused by improper method of filling a cylinder with LP-Gas could result in a damage suit that not only

would wipe out the dealer's profit on that one cylinder but might exceed the entire value of the plant itself.

Defending oneself in court in a damage suit, even when negligence is merely alleged and unproven, is an expensive and unpleasant procedure.

In modern times damage suits on account of negligence have had their shock to the defendant minimized considerably by the means of liability insurance. For the payment of a sum of money known as the premium, the insurance company agrees to defend claims for damages brought against the policyholder which arise out of certain operations, premises or equipment described in the policy, subject to an agreed limit of liability.

There are many kinds of liability insurance. Those applicable to LP-Gas include automobile liability, manufacturers' and contractors' liability, owners', landlords' and tenants' liability, elevator liability, contractual liability, owners' protective liability, products liability, employers' liability and workmen's compensation. There are also liability features in policies covering pressure vessels and machinery.



D. C. COLLYER

Automobile liability insurance covers liability for operation of motor vehicles. In addition to the usual hazards of operation of automotive equipment on streets and highways, the LP-Gas dealer has the hazard of carrying an explosive product which, in itself, may cause injury.

Covers Conduct of Business

Manufacturers and contractors and owners, landlords and tenants liability insurance covers liability for the existence of premises or the conduct of business operations. A common type of claim handled under this kind of policy is that of a member of the public who falls on a defective step or sidewalk. This is a type of insurance which would defend claims for injury to the public or damage to the property of others because of the explosion of a storage tank at a bulk station.

Elevator liability insurance is a coverage written on freight and passenger elevators, hoists and man lifts.

Contractual liability insurance covers liability assumed by contract or agreement. A common example is a "hold harmless" agreement made in connection with use of a railroad sidetrack or a lease agreement containing hold harmless clauses. There are many individuals and corporations who are able to persuade others to sign an agreement assuming liability for which the first party is really responsible. Every time this is done the second party has acquired a contractual liability exposure.

Owners or contractors protective liability insurance covers liability for acts of contractors or subcontractors. An example is in connection with construction work let by contract. If a contractor has a public liability claim which he is unable to pay, the claimant may sue the person or firm for whom the work is being done. Defense of a claim of this nature would come within the scope of owners protective liability insurance.

Products liability covers claims occurring after the product is in the hands of the consumer. The LP-Gas industry has a considerable products liability exposure, not only because of gas sold but because of appliances handled by dealers. In most cases when a stove explodes the customer blames the stove rather than the gas. Many dealers feel that the entire burden of defending a claim from a defective stove rests with the manufacturer. The courts have taken a different attitude. A dealer, especially one who does installation and service work, has a definite responsibility for the condition of products sold.

Fundamental Differences Cited

Employers liability insurance covers claims for injuries to employees. Now that 47 of our 48 states have workmen's compensation laws, employers liability is more often written in connection with a workmen's compensation policy. Fundamentally, the difference between employers liability and workmen's compensation is that the former covers the employer for negligence, whereas workmen's compensation

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always written to comply with
the provisions of the workmen's
compensation laws of one or more
states. The policy forms, benefits
paid, etc., are those specified by
state law.

The hazards of employment in
the LP-Gas industry include those
to which workers in the petroleum
industry as a whole are subject, to-
gether with those which arise from
the problems of handling LP-Gas.

Write Several Policies Together

It is the tendency of insurance
companies nowadays to combine the
various forms of liability insurance
into one or two policies rather than
to issue a separate policy for each
kind of insurance. The exception is
in the case of workmen's compensation. State re-
quirements for a specified policy
form make it impractical at the
present time to combine compensa-
tion with other kinds of insurance
in the same policy.

The method of rating liability
insurance for the LP-Gas industry
has been principally that used for
gasoline. Because there is some
similarity in hazard it was thought
that this would give an adequate
rating basis. This has proven to
be one of the bad guesses which
insurance men sometimes make.

The experience with liability in-
surance for LP-Gas operations has
been generally unprofitable for in-
surance companies. Most of the
companies have discontinued writ-
ing it altogether. This puts the
LP-Gas dealer not only in the un-

usual position of not being pestered
with insurance salesmen but also
makes it hard for him to find a
place to buy something he really
needs and wants.

The problem of the insurance
companies is to find a rating basis
on which they can write LP-Gas
business at a small margin of
profit.

There is much that can be done
in the way of further research in
connection with the safety prob-
lems of the industry. There have
been a number of safety codes
passed by state legislatures, but
not enough done in the way of
effective enforcement of these
codes. The national and state asso-
ciations are doing a good work on
safety publicity and discussion of
safety at their meetings but the in-
dividual members of these associa-
tions do not in most cases have
safety conditions in their own
plants at the same high standard
as they talk about at meetings.

The manpower and material
shortages make many serious prob-
lems, as anyone in the industry
will testify. Yet, they are also used
as excuses for lax enforcement of
safety rules and for continuing the
use of equipment which is in dan-
gerous condition.

By improvement of its accident
record the LP-Gas industry, as all
industries, can change the attitude
of insurance underwriters and be
in a position to buy insurance
freely and at a reasonable price.

Part 2 of this article on insurance
will tell dealers how to apply for pro-
tection and when they are eligible. It
will appear next month.

Do You Know How to Lift?

ONE of the perennial problems in many industries—injuries to workers due to incorrect lifting habits—has received a novel and impressive treatment by Bethlehem Steel Co.

The demonstration is based on the well-proved, but too infrequently practiced theory of lifting loads correctly by using the leg muscles instead of the muscles of the back.

The story is told in pictures in the columns to the right.

Step 1. The "right" or "squat" method of load lifting as portrayed by the "Mechanical Man". He starts to lift the load from the correct squatting position which bends the knees and takes the strain off the back muscles. Note indicators resting at zero. Follow them in subsequent photos.

Step 2 demonstrates how the stronger leg muscles assume 50 lbs. of the strain while the strain on the back is only 25 lbs. This method helps to prevent serious injury by bringing the leg muscles into play.

Step 3. Here the "Mechanical Man" has come to an upright position and the load is correctly distributed, as shown by the gages, with the legs still assuming the larger part of the load. Compare these three pictures with the three showing the "wrong" method of lifting loads.

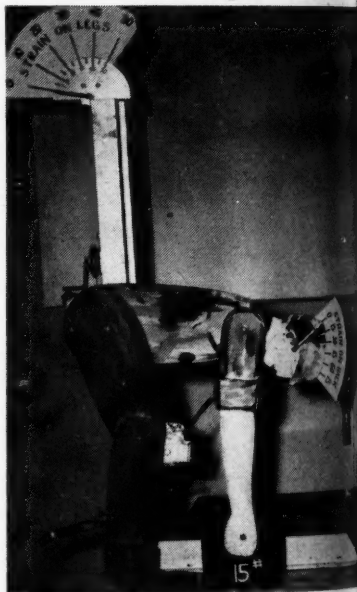
Step 4. Illustrating the "wrong" method of load lifting, the "Mechanical Man" starts to lift the load by incorrectly bending from the hips. Note indicators resting at zero.

Step 5. The "Mechanical Man" demonstrates the strain placed on the worker's back produced by this incorrect method. The back gage registers 60 lbs. strain—enough to cause serious injury. Note that the leg gage shows only 15 lbs. strain.

Step 6. Shows the completion of the incorrect lifting method. Note that the greater strain is still harmfully on the back muscles. Compare this strain distribution to the "correct" method.



1. Right



1. Wrong



2. Right



3. Right



2. Wrong



3. Wrong

Safety

Prevention of Employee Gas Accidents

TO prevent employee gas accidents,* we should discuss and thoroughly understand the following general causes of them:

1. Lack of knowledge and aptitude for this particular type of work on the employee's part.
2. Failure to use proper safety devices and maintain them in workable condition.
3. Inattention to the work at hand and indifference to product being handled and the attitude that "Safety Rules" apply to "others but not to me."

The following potential causes of employee gas accidents and corresponding preventative measures should be discussed and fully understood by all employees:

IT IS AN INCREASING practice among progressive companies to hold safety meetings in their own organizations. The Philgas Division of the Phillips Petroleum Co. is one such company. It has a well planned program, one that can be, and should be, followed as closely as possible by all dealers and distributors.

This Philgas safety program has been made available to the LP-Gas industry through F. F. Campbell, manager of the retail division, and will appear, chapter by chapter, in *BUTANE-PROPANE News*.—Editor.



F. F. CAMPBELL

(A) Those pertaining to station:

1. Venting or filling of cylinders in closed charging room without operating ventilating fan.
2. Overfilling of cylinders due to inattention or unchecked scales. Failure to properly close valves after filling cylinders.
3. Improper storing of cylinders with gas or gas vapors, such as leaving them near boiler house or where they can be hit by truck or employee.
4. Failure to keep all station lines, by-pass regulators, and excess pressure relief valves in proper operating condition. Care must be taken to see that valves before or after by-pass regulator are not closed when by-pass is to be used.
5. Tools or motors that may cause sparks must not be used in vicinities where gas vapor may accumulate. Vapor-proof flash lights should be provided for night work.
6. Open flames must never be allowed nearer than 50 feet from where gas vapors may be present.
7. Gasoline must not be used for cleaning automotive or other parts for repairs.
8. When appliances on display are moved from gas lines or lines are changed, care must be taken to make sure that all such open lines are plugged so that the accidental opening of valves will not allow gas to escape.

9. Tank trucks must not be repaired in garages with gas in delivery tanks. When minor repairs are necessary on trucks, this should be done in the yard or with only the cab of truck in the garage, with all doors open.

10. In disconnecting gas lines, care should always be taken to relieve all pressure so that liquid gas burns may be avoided.

11. Make sure that "Tank Car Connected" signs are properly placed prior to making tank car hose connections. Never work on truck or tank filler hose when gas is being pumped through them. If connections have to be changed or tightened, always shut gas off prior to doing such work.

12. Static electricity ground connections should be provided in all places where hoses are used.

13. In the event of a break in a liquid line at station, with a considerable quantity of vapors escaping near highways or railroads, have all traffic diverted or stopped until vapors have safely dissipated.

14. Only authorized employees should be allowed to enter bulk station yard—gates should be kept closed and "No Smoking" signs must be posted and observed. Fire extinguishers should be available and in working condition at all vulnerable locations.

15. Do not rely upon fellow employees for your "Safety." You should personally make sure that all station pumps, trucks, lines, or cylinder valves are in proper operating position prior to starting any operation in which they are involved.

Do not enter gas storage tanks until all lines have been disconnected and tanks have been completely purged.

(B) Precautions pertaining to field work:

1. Gas should never be delivered to customer's storage cylinder when an open flame is within gas dispersing distance, or when nearby doors or windows are open. Test for gas leaks only with soap suds.

2. Under no condition should tools be used on filler hose connections while gas is being delivered into cylinder. If position of hose is to be changed, at the filler valve, or connection is to be tightened, shut off gas by closing both hose valve and cylinder valve.

3. On out-of-gas calls, make sure all gas pilot lines and burner valves are closed prior to putting gas into the storage and gas lines. Never relight automatic appliances after control failures or pilot outages without first making sure that all accumulated gas has had ample time to be dissipated. "Don't gamble with safety." Keep other people away. Don't turn on lights. Don't depend on sense of smell to detect gas. Create circulation by fanning with cardboard or papers and have all doors and windows open. Allow ample time.

4. When home gas lines are first installed, altered or repaired, always use monometer to test lines for leakage prior to lighting or relighting pilots or appliance burners. In lighting pilots or burners, always have face well away from ignition areas and have match at point of ignition when gas valve is slowly opened.

5. Never use tools that will create sparks where gas vapors are present. Use safety flash lights in dark places.

In making new installations, never

move cylinder without safety cap or bonnet firmly fixed in position. This applies to transporting cylinder on trucks also.

6. Never allow customer or others to get too close to you when making gas deliveries, installations or repairs, as they endanger themselves and keep your mind away from your business at hand. The "No Smoking" rules must be rightly observed while performing the above mentioned duties.

7. Rehearse just what you would do in case of the potential gas accidents outlined by the above precautions. Educate all employees to know what to do in the face of all conceivable gas accidents.

Prior to concluding this subject, review all discussable 1943 and 1944 accidents that will serve to illustrate these above discussed matters and have employees outline preventative measures that should have been taken to avoid the accidents in question.

Conclude the meeting by having all pledge wholehearted observance of "Safety Rules" and no more "Employee Gas Accidents."

* The first of this series of safety discussions, entitled, "Prevention of Employee Automotive Accidents," appeared in the April issue of BUTANE-PROPANE News, page 30. Next month: "Prevention of Customer Gas Utilization Accidents."

New Burner Design Bulletin Analyzes Temperature Factor

Publication of the latest research bulletin of a series on technical factors affecting gas burner design has been completed by the American Gas Association Testing Laboratories and

distribution made to the gas industry.

The new research bulletin, No. 34, "Temperature as a Factor in the Design of Aerated Gas Burners," is the eighth dealing specifically with burner research to be released under the supervision of the Association's committee on domestic gas research. Data presented are complementary to those given in preceding bulletins of the series. Together they further advance the technical foundation already established towards a scientific approach to the problem of burner design.

Characteristic flame limits are analyzed in terms of air-gas mixture temperatures within the burner head and effects of elevated temperatures on lifting, yellow tip, and flash-back presented in detail. Formulas are developed for the calculation of flame inner cone height, applicable to natural, manufactured and butane gases.

A section of the new bulletin is devoted to discussion of further study of burners injecting all air necessary for combustion as primary air. Temperatures of air-gas mixtures normally encountered in aerated burners of numerous contemporary appliances are likewise presented.

Proposed Additions to Gas Valve Standards Distributed

New provisions for inclusion in American Standard Listing Requirements for Gas Valves have been printed and distributed to the industry for criticism.

They consist mainly of additional dimensional and constructional features which apply to gas range valves.

Generally accepted as representing best current practices, they have accordingly been designated as "standard" features and included in present listing requirements.

QUIZ Action Inside a Cylinder

• This department is a monthly feature to stimulate thought and to give operators basic industry facts. Clip out for your notebook or file in a standard, 3-ring, loose-leaf binder. Sources of information: The Bottled Gas Manual, Handbook Butane-Propane Gases.

Questions

Answers

1

What is inside of a "full" LP-Gas cylinder?

A "full" cylinder contains the maximum allowable amount of liquid LP-Gas plus a small volume of LP-Gas in vapor form which fills the space allowed for expansion of the liquid, due to temperature increases.

2

What happens in a cylinder during storing and shipping?

The pressure inside the cylinder goes up and down with changes in temperature. The liquid level rises and lowers as the liquid expands and contracts but the total weight of the contents does not change.

3

What happens in the cylinder when the consumer lights an appliance?

When the appliance starts to use gas the cylinder regulator opens and allows some gas from the top of the cylinder to flow out. This reduces the pressure slightly so the liquid starts to boil, forming more gas.

4

Why does the liquid boil in the cylinder?

At any given temperature, LP-Gas exerts a definite pressure. If this pressure is reduced, the liquid will boil, making gas to hold this pressure.

5

Where does the heat come from to boil the liquid?

The heat from the air surrounding the cylinder or from the sun's rays flows into the liquid to provide the heat of vaporization.

6

What would happen on a cold night when there does not appear to be any heat available?

Propane will still boil because its boiling point is about -44° F. so even though it is cold outdoors there is still enough heat in the atmosphere to supply the cylinder.

7

What would happen if gas is drawn too fast from a cylinder?

If gas is drawn too fast for the heat from the atmosphere to keep up the boiling, the pressure on the cylinder will drop. If it gets too low the appliances will not function properly.

8

How can this pressure reduction be overcome?

When the installation is made the amount of gas required to operate all appliances is known. A sufficient number of cylinders to supply this load should be installed.

9

How can the proper number of cylinders be determined?

Information has been collected, giving the gas making capacity of cylinders at various temperatures (see Page 28, Bottled Gas Manual) and provision should be made for peak loads and partially emptied cylinders.

10

What causes frosting of cylinders?

When a cylinder starts to collect frost on the outside it is an indication that the cylinder is being drawn upon too fast. The frost collects because the temperature of the cylinder has been reduced below the freezing point of water and the water from the air forms the frost on the cylinder wall.

SUBJECTS TO BE COVERED IN FORTHCOMING ISSUES:

- The Simple Regulator • Regulator Manifolds • How to Buy and Install Equipment
- Pipe Lines • Testing for Leaks, Burner Adjustment • Thermostats, Pilots and Pilot Controls • Burner Design and Application • Appliance Conversions.

Kitchen Ventilation Is New Approach to Sales

By LEON OURUSOFF

Member, Technical Advisory Subcommittee for Project No. 1,
Domestic Gas Cooking Research, and

R. C. GREGG

Assistant Chief Research Engineer, American Gas Association
Testing Laboratories

THE present building trend is toward greater numbers of small homes with correspondingly compact kitchens. In keeping with modern gas appliance design and to take full advantage of reduced space, the entire kitchen is being modernized in appearance and utility.

To coordinate these trends into a harmonious unit, the Coordinated Gas Kitchen Committee of the American Gas Association has initiated a cooperative program now under way, participated in by gas appliance manufacturers, gas utilities, and manufacturers of kitchen cabinets, sinks and other related accessories. These interested groups have united to develop as far as possible the standardization of various kitchen components and to promote the "New Freedom Gas Kitchen" with the ultimate objective of providing American homes with coordinated, comfortable, clean and efficient kitchens.

In addition to the standardization of dimensions and promotional phases of this program, attention is being given to the im-

portant feature of kitchen ventilation. The need for advancement in that technique has been intensified by the necessity of keeping abreast with modern concepts of kitchen design requiring something better than the use of unsightly canopy hoods or conventional ventilating fans installed in the wall.

Recognizing the need for a scientific study of this problem, the project was assigned to the American Gas Association Testing Laboratories in May, 1944.

Studies to date have entailed re-

IN NEW home construction after the war lies much of the future for LP-Gas. Dealers must find ways to capitalize upon this knowledge.

The time to sell the gas idea to new home owners is BEFORE the house is built so that into the plans can be incorporated proper kitchen ventilation, compartments for central heating units, flue vents, etc.

Here is an article that indicates the place kitchen ventilation is to occupy in the post-war future.

This is one of several papers prepared by members of the A.G.A. Testing Laboratories for presentation to the Technical Conference on Domestic Gas Research, scheduled for last February but cancelled in compliance with the anti-convention order of the ODT.—Editor.

removal of excess heat, moisture and cooking odors resulting from operation of the domestic gas range. Other phases of kitchen ventilation as related to removal of grease and to the operation of gas refrigerators have been started only recently.

A typical test assembly is shown in Fig. 1. It will be noted that the gas range is placed between two standard sized kitchen cabinets. The hood located above the range is adjustable in height (for purposes of test) and conforms to the general cabinet design. It is connected to a rectangular duct at the top. In the normal installation, space above the cabinet is unusable because of its height above the

floor. In a practical application, the exhaust blower could be incorporated in the cabinet above the range as a unit assembly or placed near the exhaust outlet.

As this style of ventilating hood, which, for convenience may be designated as the cabinet type hood, indicated great possibilities from the standpoint of appearance and standardization of assembly, an extensive investigation of its performance under various conditions was conducted. The performances of two other types of ventilating hoods were also studied. These were a modified wall type hood and a full canopy type hood, shown in Figs. 2 and 3, respectively,

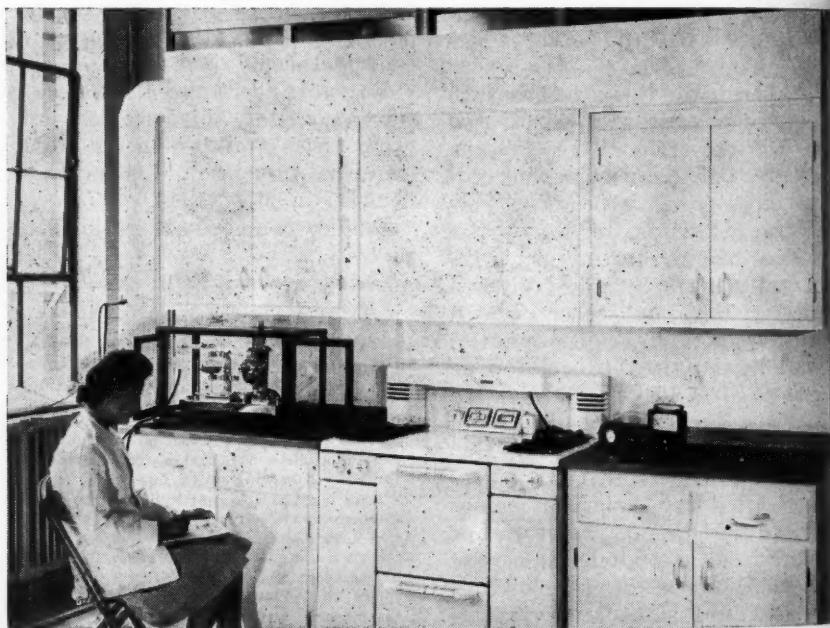


Fig. 1. General view of test assembly showing cabinet type hood with openings (not shown) on bottom of center portion of cabinet structure directly above range.

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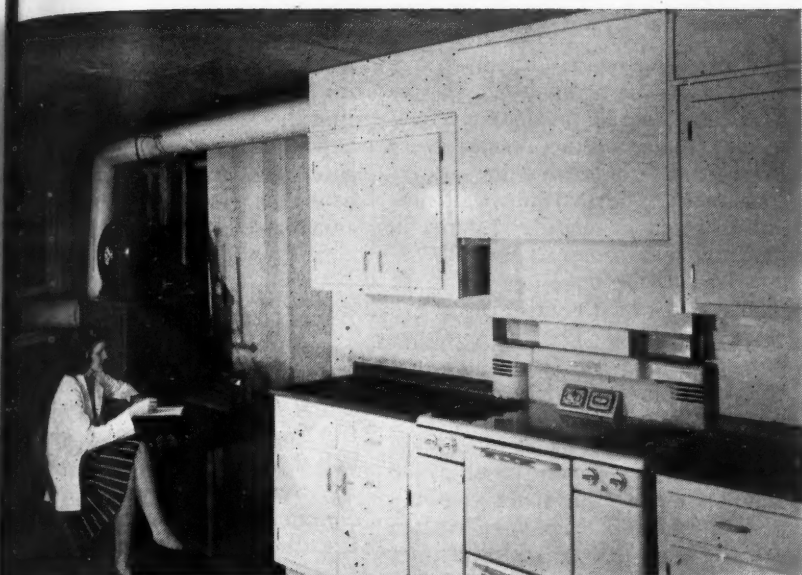


Fig. 2. General view showing wall type hood with openings directly above back splash.

All three types of hoods were connected to a cage-type blower capable of exhausting air at any desired rate up to 900 cfm. Efficiency of heat removal from the kitchen was determined from the quantity of air discharged and the temperature rise in the exhaust duct above the average room temperature.

Heat removal with the cabinet type hood was studied to determine the effect of height of its inlet above the range top and the area and location of openings comprising the inlet in the front, rear or sides of the bottom of the hood.

These openings (not visible in Fig. 1) are located along the bottom of center cabinet structure located directly above the range top. The

side openings referred to consist of 6x13 in. portions on each side of this hood bottom through which gaseous products resulting from cooking are drawn.

Front and rear openings are 4x36 in. (entire width of range) located along front and rear edges, respectively, of the bottom of the hood. Results obtained with 900 cfm air withdrawal rate and at various heights ranging from 18 to 42 in. above the range top are presented in Fig. 4.

From these curves it is apparent that height of the hood inlet within the aforementioned limits has no significant effect on the amount of heat removed. Similar studies with other arrangement of openings at sides, front and rear of the

bottom of the hood, ranging in area from 74 to 462 sq. in., indicated that there is some slight advantage in having a large opening. It was likewise indicated that for a divided top range, better results were obtained with side openings.

The rate of air withdrawal, naturally, is a governing factor in effecting heat removal. Results obtained with side openings and with various rates of air withdrawal are shown in Fig. 5. The upper curve represents the efficiency of heat removal with the two rear burners and oven burner in operation.

It will be noted that much less efficient heat removal is obtained when operating the front two top burners and the oven burner than with the oven and rear top burners in use. Also, it is significant that the divergence of these curves is greatest at low rates of air withdrawal.

An attempt was made to improve

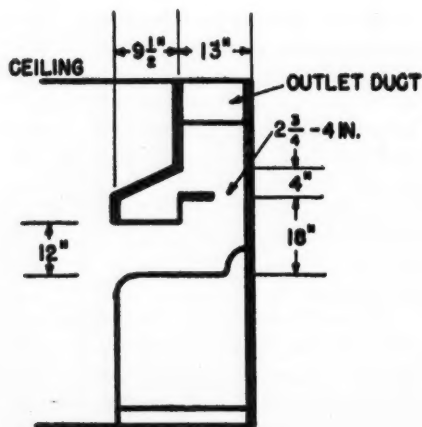


Fig. 3 Essential dimensions of canopy type ventilating hood.

the efficiency of heat removal from the front burners by use of an auxiliary opening 24-in. wide x 12 in. high at the front of the cabinet just below the ceiling level. This expedient, however, did not indicate any immediate advantage in heat removal as shown by the lower curve in Fig. 5.

Wall Type Ventilators Tested

A similar series of tests were conducted with a wall type ventilating hood. This is shown in Fig. 2 and consists of a 4 x 36 in. opening located just above the back splash of the range, connected to the ventilating system through a channel in front of the back wall. Results of heat removal tests with this hood are shown, in Fig. 6.

In general, the heat removal curves followed the same trend but with slightly lower values than those obtained with the canopy hood. In these tests the central portion of the opening was closed to provide two openings directly back of each section of the divided top range. This arrangement, as would be expected, is more effective for this type of construction. Efficiency of removal of heat due to oven operation was found to be high because the oven vents were directly under and adjacent to the ventilating hood openings.

Several modifications of this wall type hood were made in an effort to obtain more effective heat removal from the front burners. The hood opening was raised to a height of 24 in. above the cooking top and instead of two openings as just described, a single 2 in. slot was

Table 1. Comparative Efficiencies of Heat Removal Obtained With Different Adaptations of the Lower Wall Type Hood

| Type of Hood Opening In. | Height Above Cooking Top In. | Air-With- drawal cfm | Burners in Operation | % Heat Removed |
|--------------------------------|------------------------------------|----------------------------|-------------------------|-------------------|
| 2- 4 x 9½ | 10 | 300 | 2 front and oven | 25.0 |
| " " | 10 | 560 | " " | 53.0 |
| 1-36 x 2 | 18 | 296 | " " | 26.0 |
| " " | 18 | 567 | " " | 50.0 |
| 1-36 x 2 | 14¾ | 280 | " " | 25.3 |
| " " | 14¾ | 580 | " " | 54.1 |

extended for the full width of the duct (36 in.). This was found to give practically the same efficiency of heat removal as the original wall type hood.

Results are presented in Table 1 together with those obtained with the same hood equipped with a 6 in. extension of the hood opening toward the front of the range. This extension consisted of a channel 36 in. wide x 2 in. directed downward toward the range top at approximately a 45° angle.

The latter type hood also gave almost identical performance to that obtained with the other two. Apparently, the maximum withdrawal of heat from the front burners with this type of hood is about 25% and 50%, respectively, at 300 and 500 cfm for any hood opening extending towards the front not farther than standard cabinet depth (13 in.).

A series of heat removal tests were made with a full canopy hood as shown in Fig. 3, constructed as a visor-like extension to a cabinet type hood. This particular design

was selected for study because it could be made adjustable so that the visor extension could be retracted or even concealed when not in use.

With this arrangement the efficiency of heat removal was from 60% to 65% at 300 cfm and from 66% to 71% at 500 cfm, respectively. It was equally effective for front or rear burners. It is doubtful if the efficiency of this hood is sufficiently high to justify its preference to the cabinet type hood from the standpoint of heat removal from rear top burners or oven burner.

Although it did indicate considerable advantage, particularly with front top burners, this same improvement could be effected with the cabinet hood by placing the four top burners in line at the rear of the top section.

In the final analysis the worth of any kitchen ventilating plan largely depends on its effectiveness in preventing an excessive rise in kitchen temperature as a result of cooking operations. This is difficult

to determine in a laboratory because conditions in the field are so varied that any one particular test arrangement could be representative at the most of only a few service conditions. Rise in kitchen temperature depends upon many factors, including size and location of the kitchen, outside temperature conditions and quantity of heat liberated.

A number of room temperature rise determinations were carried out with different types of ventilating hoods and with both the ovens and top burners in operation. Representative results are presented in Fig. 7, including those obtained with both high and low ceiling.

A slightly higher temperature rise was indicated for the low ceiling (8 ft.) compared with the high

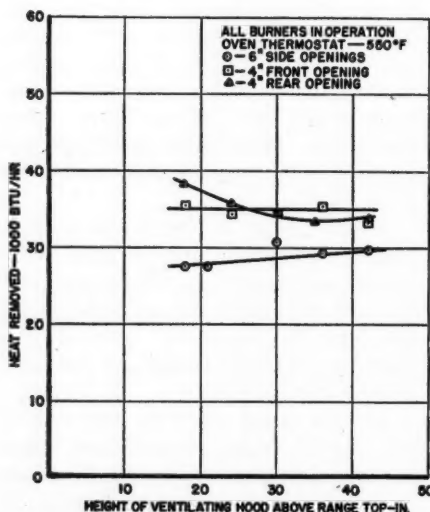


Fig. 4. Effect of height of cabinet type ventilating hood on heat removal.

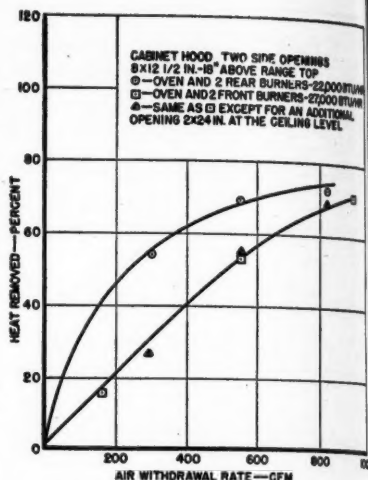


Fig. 5. Effect of rate air withdrawal on efficiency of heat removal with cabinet type hood.

ceiling (12 ft.) but the difference was not as great as might be expected. The floor space was somewhat larger (12 x 20) than in an average kitchen and the 8 ft. ceiling extended only 16 ft. instead of the full length of the kitchen. This fact may account for the small difference in temperature rise. It seems reasonable, however, that the use of a ventilating fan would lessen the effect of room size on temperature rise.

In general the results indicate that a fairly low rate of air withdrawal can obviate an excessive rise in room temperature over the average cooking period. A comparison of the two upper curves will give an indication of the advantage gained by use of a kitchen ventilating fan.

Removal of moisture formerly

was not looked upon as a factor of major importance in kitchen ventilation, although in warm weather, moisture contributes materially to the rise in "effective temperature." With the advent of home air conditioning and the present trend toward small, well insulated homes, avoidance of excessive moisture in the kitchen and living spaces has become a significant problem in winter and in summer. Experimental data on moisture removal with different designs of ventilating hoods indicated that it is easier to remove excessive moisture than excessive heat.

All moisture produced from boiling water in 9 in. pans above the two rear burners, including that produced by combustion, was removed by each of the three types of hoods at a 300 cfm rate of air withdrawal. The canopy type hood was equally effective in removing moisture from the front burners and was reasonably effective at rates as low as 170 cfm.

Wall Type Least Effective

The wall type hood was least effective in removing moisture from the front burners—55% at 300 cfm. The cabinet type was reasonably efficient—70% at 300 cfm. The latter value could be increased to 84% by the use of an auxiliary opening 2 x 24 in. just below the ceiling level.

Certain cooking odors are much more difficult to remove than either moisture or heat. This is understandable even though the odor particles are present in very small quantities. A relatively small num-

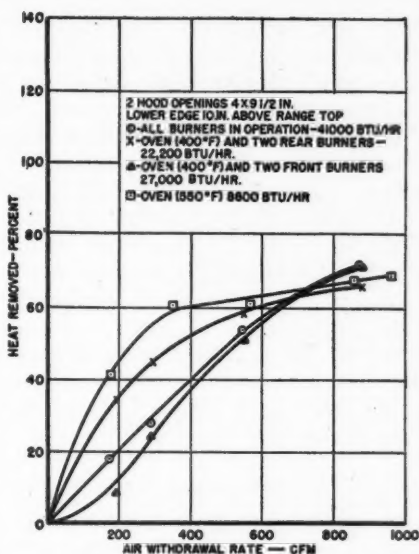


Fig. 6. Results of heat removal test with wall type hood.

ber of particles that have diffused throughout the room usually are sufficient to impart a noticeable odor to the atmosphere. It is obvious that very high rates of air withdrawal would be required to entirely remove certain odors from any given room.

Many cooking odors might be considered desirable when confined to the kitchen. The real problem is to prevent the diffusion of odors from the kitchen into other spaces in the house. It was found possible (with a 300 cfm rate of air withdrawal) to retain within the kitchen practically all odors produced by cooking of most foods when the inlet air was drawn through the kitchen door. Of course, all odors produced by cooking foods such as cabbage, cauliflower and onions

could not be entirely confined to the kitchen but were diluted to an acceptable degree in adjoining rooms.

Odors from roasting meat in the oven could be almost completely removed from the kitchen with any of the three types of hoods studied. None of the ventilating hoods were effective in entirely removing pronounced cooking odors produced from preparing foods over the top burners. The canopy type hood was the most effective but even so, required very high rates of air withdrawal for best results.

Air Withdrawal Speed Determined

From information obtained to date, it appears that the effectiveness of ventilating a kitchen from the standpoints of removal of excess heat, moisture and cooking odors is highly dependent upon the rate of air withdrawal. Results of tests indicate that, based on the assumption that 300 cfm is the maximum practical rate of air withdrawal, a cabinet type ventilating hood offers good possibilities from the overall standpoints

of appearance, performance and simplicity of design and installation.

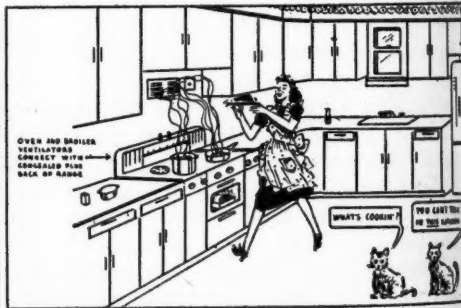
Removal of moisture is comparatively easy since practically all moisture produced by rear top burners and oven can be removed with any of the three types of hoods studied. With the cabinet type hood, removal of approximately 70% to 80% of the moisture produced by the front top burners can be effected.

Although all odors cannot be removed from the kitchen even with very high rates of air withdrawal, proper ventilation aids materially in confining odors to the kitchen.

Aside from the studies made to date, two additional factors should be borne in mind, namely:

1. Although hood ventilators do not instantly remove all heat dissipated by cooking operations, at least they cause a deflection of heat away from the person standing near the range or elsewhere in the kitchen, while conventional type ventilators may cause the opposite to happen.

2. Likewise, hood ventilators have the important advantage, not normally



Rochester (N. Y.) Gas & Electric Co. tells this kitchen ventilation story.

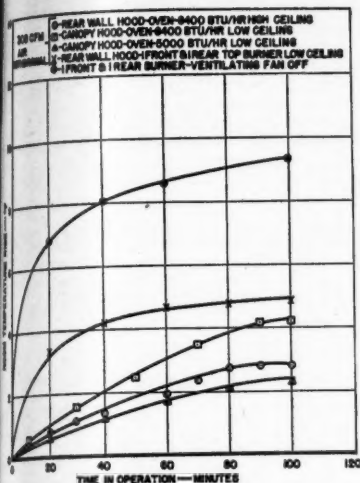


Fig. 7. Room temperature rise with and without ventilating fan.

possessed by conventional fans, of preventing the release of grease laden vapors into the kitchen, thereby eliminating the necessity for substantial upkeep of wall and ceiling surfaces.

This outline should be viewed as a presentation of preliminary findings, some of which are not as yet conclusive. Only a limited number of ventilator designs have been tried as the initial purpose of this study was to assemble basic information rather than to develop specific designs.

J. D. Newcomb, Jr., Boiler Inspector, Killed by Hitchhiker

J. D. Newcomb, chief boiler inspector for the state of Arkansas and long identified with the liquefied petroleum gas industry in his official capacity as state inspector and as a speaker be-

fore conventions, was murdered March 15 near Heber Springs, Ark., by James W. Hall.

Mr. Newcomb had picked up the slayer when the latter asked for a ride. After shooting Mr. Newcomb, Hall drove the car off the road and set it on fire in an attempt to destroy the evidence.

Hall was discharged from the Navy recently. He admitted the murder of Mr. Newcomb and five other persons, including his wife, obtaining only \$200 from the six killings.

Gas Institute Names Specialists to Staff

Morris Fisher and Dr. Sidney Katz, have been added to the technical staff of the Institute of Gas Technology, Chicago, according to John I. Yellott, director.

Mr. Fisher, a specialist in micromeritics, the science of small particles, has been assigned to work on an improved method of producing carbon black, a paint pigment.

Dr. Katz will work in the field of gas chemistry, particularly in the physical chemistry of fundamental gasification reactions. His first assignment is a special project for the National Research Council.

Tank Car Demurrage Charges Will Continue Until June 1

Col. J. Monroe Johnson, director of the Office of Defense Transportation, announced on March 23 that increased demurrage charges on railway tank cars, as ordered Jan. 22 and due to end March 31, will be continued until June 1.

The effect of this order is to continue without change the provisions of the present order.

Economics of Gas Brooding and Replacement of Competitive Equipment

IN THE three previous chapters I have told you some things that the government has to say about brooding, and I have tried to marshal for your attention such figures as would impress you with the magnitude of the opportunity which is ours if we will but take advantage of it. In this chapter I shall try to show you that poultry and turkey raisers are not unacquainted with the advantages of gas brooding and that perhaps acquisition of this desirable business will not be as difficult as you have anticipated.

As I see the situation, your problem is not so much selling poultry and turkey raisers on the merits of gas brooding as it is to convince them that they can afford to discard their present brooding equipment in which they have considerable money invested.

First, I am going to turn to my old friend, John Sanderson, of the Caledonian Poultry Farms at Newfield, Maine, because I am best acquainted with his operations. As you might guess from the name of his farm, John is a canny Scotchman, so you can rest assured that

what he has to say has been proved to the satisfaction of his Scotch thrift. I quote from a letter received from him some time ago:

Gas Brooding as Cheap or Cheaper Than Coal Brooding

"Having been in the poultry business on a fairly large scale for more than 10 years and having had a great deal of experience with coal brooders, and some experience with electric brooders, and not being satisfied with either method of brooding, last winter I spent some time in studying brooders. As a result of the study and inspection I had 30 A. F. Wood gas brooders installed.

"At the present time I have 15,000 chickens on my place, 13,000 of them being 8 weeks old and 100% feathered, with mortality less than 2%. I am certainly proud of my chickens this year.

"Comparing the cost of running brooders on coal and on 'Philgas' during coldest months, the way I operated my stoves, the gas brooders cost me about $\frac{1}{2}$ c per chick more than coal. I didn't keep the curtains on the brooders down; if I had I am sure I would have saved that extra $\frac{1}{2}$ c

By C. C. TURNER

**Special Representative,
Butane-Propane News**

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and perhaps more. Late brooding with gas would be far below the cost of coal.

"The thing that I am most pleased about in my new brooders is the saving in labor and freedom from worry. No matter how the storms rage, the gas brooders keep running just the same. There's no power to suddenly go off and no fires to burn out in the middle of a cold, windy night, and my pens have been just about the right temperature.

"I think gas brooding is the nearest to the perfect brooder, which is the old lady herself.

"You may use this letter if you wish.

"Very truly yours,

"JOHN SANDERSON."

There is a sequel to this letter which was written to our company in 1940. Subsequent tests of gas brooding caused Jack Sanderson to become so enthusiastic about it that he begged us for the privilege of going out on the road and selling gas brooders on a strictly commission basis. He did this in the off-season when he was not busy brooding chicks on his own farm. He knew the poultry business from A to Z, could talk the poultryman's language, and he was in no small

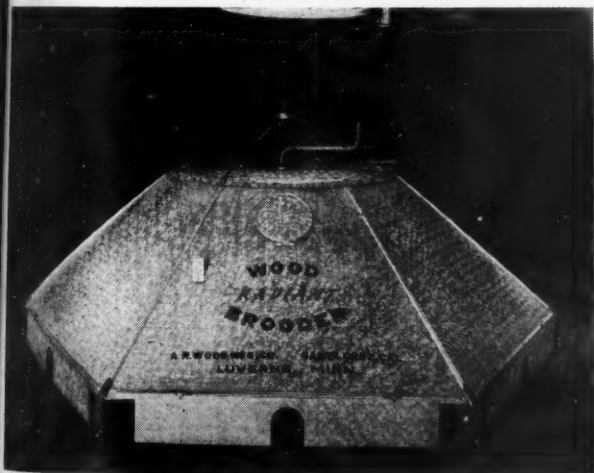
measure responsible for the large number of gas brooders which are operating up here in northern New England.

Incidentally, if you think that New England winters are mild, you should try living through one of them. This past winter we have had days in a stretch with the thermometer clinging to 40 below zero, and snow which was from three to four feet deep on the level, yet literally hundreds of northern New England poultry men are using Wood Gas Brooders and the cold house method of brooding!

Gas Brooders and Cold Brooder Houses Give Perfect Satisfaction in Minnesota

Out in Minnesota the winters are something to talk about. Let us see what the Worthington Creamery and Produce Co., Inc., of Worthington, Minn., had to say about their LP-Gas brooders:

Illustration of a gas brooder with curtains lowered. The use of curtains in extremely cold weather and at night will cut down gas consumption considerably.



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"You will recall that two years ago we made a trial installation of the Wood radiant gas (bottle) brooder which resulted in perfect satisfaction.

"This year we have brooded over 43,000 poults under these gas brooders, bringing unsolicited praise from our growers regarding the results as to cost of operation, rapidity of feathering, simplicity of operation and minimum of care.

"Our chick growers are exceedingly enthusiastic over the results they have obtained, such as shorter brooding period, rugged growth and "huskier" cockerels and pullets.

Cold room brooding, which is the chief principle of the Wood radiant gas brooder, instills permanent vigor into both chicks and poults by its promotion of rapid feathering and rugged body growth.

"The results we have observed warrant our heartiest endorsement.

"Yours truly,

"Worthington Creamery and Produce Co.
"E. O. Olson."

Cold Room Brooding of Turkeys Successful in Iowa

In Iowa they have some rugged weather, too, and the following letter from Moline Bros. Turkey Farm at Mansom, Iowa, in regard to turkey brooding is of particular worth in combatting the claims of some operators that turkey brooding is unsatisfactory by the cold house method:

"In reply to yours of Feb. 2, I wish to say that we have used A. R. Wood gas brooders two years and we are well satisfied with them.

"In 1940 we operated seven of the Wood Brooders and two electric stoves; we also operated 14 oil or distillate burners.

"In 1941 we used 16 such gas burners and 14 oil burners.

"In 1942 we are using all gas burners and do not intend to use any other type of heater.

"These brooders are well made and as near fool proof as any we have ever seen. We use bottled gas and have the six foot size. We start 250 poults under each stove. Have never used them with chickens as we discontinued the chicken business several years ago.

"In regard to hot and cold room brooding, that is the only method we use. Of

course our brooder houses are fully insulated and where there are a number of these gas brooders operating the air is not as cold as it would be outside. We are starting 12,000 this year, with gas brooders and the method just described.

"I think that the above shows very plainly what we think of the brooder in question. If it wasn't the best in our opinion we would have thrown it out some time ago.

"Sincerely,

"Moline Bros.

"Will T. Moline."

Indiana Test Shows a Net Profit of Over 27%

From R. W. Freeman, of New Carlisle, Ind., there comes a very practical testimonial as to the merits of gas brooding, this one being supported by figures which are more complete than usual, as supplied by Ward Kilgore:

| | |
|--|----------|
| 300 chicks at 11½¢ ea. Nov. 5, 1940..... | \$ 34.50 |
| 1 bale peat litter | 3.50 |
| 1 bale straw | .55 |
| 1787 lbs. 20% Hubbard's broiler mash..... | 43.88 |
| 1220 lbs. cracked corn at \$1.55 per cwt. | 18.57 |
| 135 lbs. grit..... | 1.43 |
| 90 lbs. flushing and conditioning mash..... | 3.23 |
| 6 tanks gas, 20 lbs. each @ 1.35..... | 8.10 |

Cost of production of 294 chicks.....\$114.66

Sold 294 chicks Jan. 15—837¼ lbs. @ 17¢ 142.33

Sold manurized peat litter..... 3.50

Gross sales 145.83

Cost of chicks, feed, brooding litter, etc. 114.66

Net profit\$ 31.77

Net profit per chick—10.08 cents.

Feed cost per pound of chick—8.51 cents.

Pounds of broiler mash per chick—6.08 lbs.

Pounds of scratch feed used per chick—4.10 lbs.

Average weight per chick—10 weeks—2.35 lbs.

Pounds of feed used to produce pound of chick—3.6 lbs.

This batch of chickens was raised in an unlined brooder house during which water froze 11 mornings and under wet conditions due to unlined house. House was never dry inside. Temperature in house

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was never more than a few degrees warmer than outside.

Mr. Freeman states that he would not consider using any other type brooder in the future. He now has 2 6-ft. and 2 8-ft. gas brooders.

Analyzing this particular application I would say that the gas consumption was too high by some 42 lbs. This may have been due to the brooder house, which admittedly was not in good condition, or it may have been something to do with adjustment or gas equipment.

Personally, I do not like to see 20-lb. cylinders go onto a brooding job, particularly in cold weather, because such cylinders lack vaporizing surface for any large demand upon them, and may increase operating costs because of this.

In spite of what would appear to me to be too high a fuel consump-

tion, Mr. Freeman was pleased with the results obtained else he would not have bought additional gas brooders.

Late Brooding by Gas in Pennsylvania Shows a Mortality of Less Than 2%

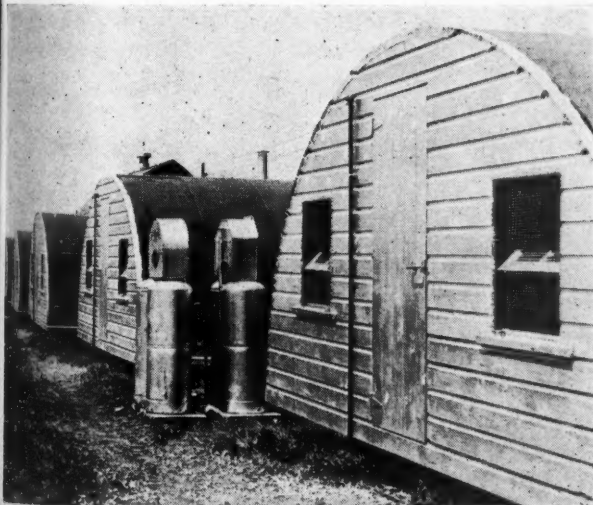
From the National Farm School of Bucks County, Pa., there comes a very excellent testimonial to late brooding. I quote from the letter of H. Meisler, head of the poultry department:

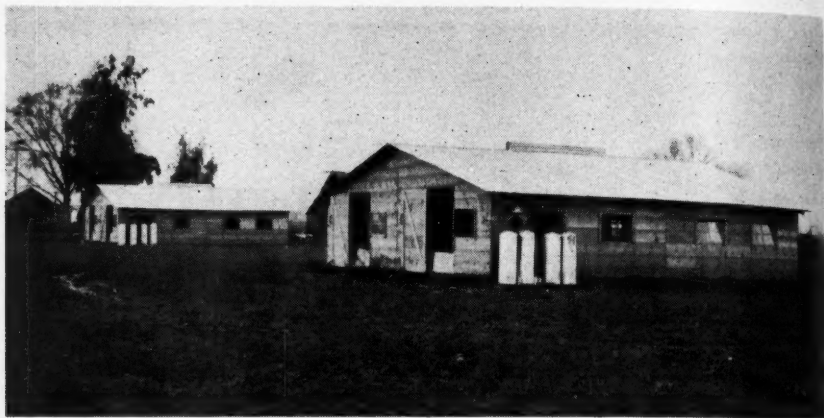
"On July 31 we started 311 barred rock chicks under one of your radiant gas brooder stoves. The chicks received heat from the propane gas until they were five weeks of age. Only 76 lbs. of gas were consumed, and we have had a mortality to date of only five chicks. They are a very even group.

"What makes this record even more remarkable is that the entire project has been taken care of by students.

"Today our off-season group of barred plymouth rock chicks is eight weeks old. We weighed off 25 males and 25 females, and they weighed, respectively, 31½ lbs.

Typical gas installation at brooder houses in Renville, Minn.





This type of colony brooder house is popular in Iowa and Minnesota.

and 29 lbs., full weight for the 25 chicks in each group."

One might go on and on with such examples, for the files of gas brooder manufacturers and those who are interested in brooding are crammed full of such testimonials. What have these men, whose letters we have quoted, said in regard to gas brooding?

**12 Advantages of Gas Brooding
as Given by the Poultry Raisers Themselves**

1. Gas brooding produces early and complete feathering.
2. Mortality under gas brooders is exceptionally low.
3. Gas brooding is the nearest to the old "biddy" herself.
4. Gas brooding periods are shorter.
5. Gas brooded cockerels and pullets are huskier.
6. Gas brooding instills permanent vigor.
7. The cold house method of brooding is best.
8. Fuel cost is as low as coal in winter brooding.

9. Fuel cost is lower than coal in late brooding.
10. Gas brooders are dependable.
11. Gas brooders require less work and attention.
12. Gas brooders are as near fool proof as it is possible to make them.

These men are not alone in their opinions, and you will find the majority of those who do brooding of the same opinion. It is but natural that they should hesitate at discarding equipment which has served them, but from the information which has been supplied to you in these chapters you should be able to convince the majority of them that the investment will soon be written off in the way of greater profits.

Your approach and your conduct in dealing with poultry and turkey raisers must be studied and well planned. You must at all times remember that the successful ones are well versed in all of the angles of their business. They are great readers, many of them are gradu-

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ates of agricultural colleges, and most of them have given much thought to gas brooding.

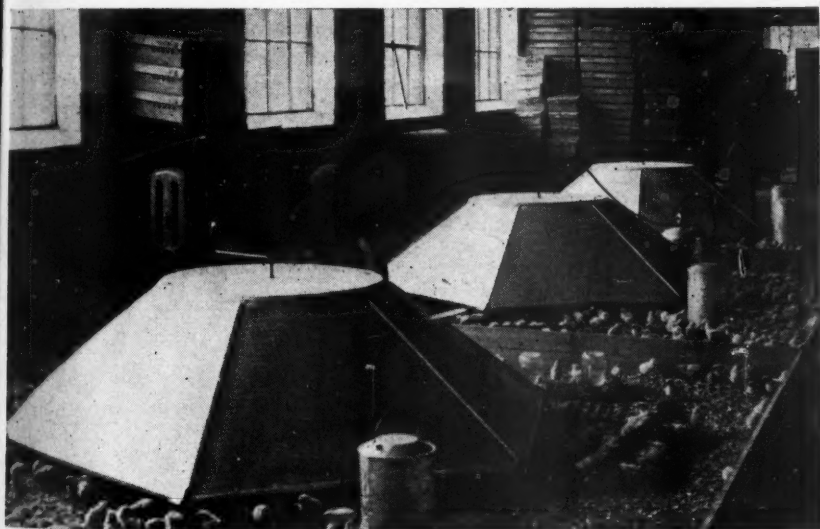
There are many schools of thought in regard to almost everything which has to do with the raising of poultry. You can get yourself into a beautiful mess by voicing your opinions on such things as colony vs. individual brooder houses. Both have their advantages.

You will also find that there exists among poultrymen in any community a measure of rivalry. Don't peddle information from one raiser to another, for much which you will be told in confidence is of the nature of trade secrets.

Then again, who are we in the gas business to tell these men who have specialized in a business how it should be run? We will do well

if we know our own product and what it will do. If we can figure brooding costs and can prove the merits of cold-house vs. hot-house brooding and can prove that the gas brooder is superior to any other brooder, we shall do well enough. A general knowledge of the poultry and turkey business is a good thing, for it will help you to talk in its own peculiar vernacular, but knowledge of the industry which will enable you to talk with authority on all subjects is only gained through years of experience.

One word of warning, don't go barging into any poultryman's establishment unless you wish to run the risk of being unceremoniously kicked out. This is because of the great fear which all poultry men have of bringing disease germs



Interior of brooder house at Worthington Creamery and Produce Co., Inc.,
Worthington, Minn.

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GROSS INCOME, 1943, IN THOUSANDS OF DOLLARS FROM CHICKEN, BROILER, AND EGG PRODUCTION.

Compiled from data furnished by the United States Department of Agriculture.

| STATE | CHICKENS AND BROILERS | | | EGGS | | | CHICKENS AND BROILERS | | | EGGS | | | CHICKENS AND BROILERS | | |
|---------------|-----------------------|-----------------|---------|--------------|-----------------|---------|-----------------------|-----------------|---------|--------------|-----------------|---------|-----------------------|-----------------|---------|
| | Numerical Or | Gross Income of | Dollars | Numerical Or | Gross Income of | Dollars | Numerical Or | Gross Income of | Dollars | Numerical Or | Gross Income of | Dollars | Numerical Or | Gross Income of | Dollars |
| | der in Value | Thousands of | | der in Value | Thousands of | | der in Value | Thousands of | | der in Value | Thousands of | | der in Value | Thousands of | |
| Alabama | 32 | 11711 | 24 | 22069 | 29 | 33780 | Nebraska | 13 | 30298 | 13 | 51017 | 13 | 81315 | | |
| Arizona | 44 | 2078 | 46 | 2945 | 45 | 5023 | Nevada | 48 | 43048 | | 1338 | 48 | 1768 | | |
| Arkansas | 20 | 23888 | 25 | 20877 | 25 | 44765 | New Hampshire | 38 | 6316 | 35 | 12454 | 38 | 19770 | | |
| California | 14 | 28995 | 9 | 73112 | 9 | 102007 | New Jersey | 27 | 15880 | 17 | 36076 | 20 | 51956 | | |
| Colorado | 37 | 6609 | 33 | 13611 | 37 | 20220 | New Mexico | 47 | 1098 | 43 | 4230 | 44 | 5328 | | |
| Connecticut | 25 | 17671 | 27 | 18022 | 28 | 35693 | New York | 9 | 37534 | 8 | 73781 | 8 | 111315 | | |
| Delaware | 2 | 53329 | 44 | 4044 | 19 | 57373 | North Carolina | 12 | 32289 | 22 | 30008 | 16 | 62297 | | |
| Florida | 34 | 9714 | 40 | 7586 | 39 | 17300 | North Dakota | 51 | 12031 | 29 | 16983 | 51 | 29014 | | |
| Georgia | 19 | 25831 | 26 | 20435 | 23 | 46266 | Ohio | 7 | 39706 | 5 | 84124 | 6 | 123830 | | |
| I Idaho | 41 | 4028 | 39 | 9169 | 40 | 13197 | Oklahoma | 23 | 18929 | 15 | 42415 | 17 | 61344 | | |
| Illinois | 4 | 49335 | 7 | 76154 | 5 | 126089 | Oregon | 39 | 5827 | 30 | 16796 | 34 | 22423 | | |
| Indiana | 8 | 39569 | 12 | 57728 | 10 | 97297 | Pennsylvania | 3 | 51345 | 3 | 90602 | 3 | 141947 | | |
| Iowa | 1 | 63672 | 1 | 115147 | 1 | 178819 | Rhode Island | 46 | 1546 | 47 | 2816 | 47 | 4362 | | |
| Kansas | 17 | 26763 | 11 | 60699 | 12 | 87462 | South Carolina | 30 | 12303 | 38 | 9695 | 36 | 21898 | | |
| Kentucky | 21 | 23599 | 16 | 36392 | 18 | 59891 | South Dakota | 23 | 18956 | 23 | 27167 | 24 | 46123 | | |
| Louisiana | 33 | 11592 | 36 | 11090 | 33 | 22682 | Tennessee | 24 | 17949 | 19 | 33092 | 21 | 51041 | | |
| Maine | 35 | 7384 | 32 | 15020 | 35 | 22404 | Texas | 6 | 39949 | 4 | 90333 | 4 | 130342 | | |
| Maryland | 15 | 28536 | 34 | 13567 | 27 | 42103 | Utah | 43 | 2444 | 37 | 10512 | 41 | 12956 | | |
| Massachusetts | 26 | 17026 | 20 | 31641 | 22 | 48667 | Vermont | 42 | 3419 | 42 | 5932 | 43 | 9351 | | |
| Michigan | 18 | 26117 | 14 | 47628 | 14 | 73745 | Virginia | 11 | 56207 | 21 | 5932 | 25 | 67632 | | |
| Minnesota | 5 | 42949 | 2 | 101034 | 2 | 143983 | Washington | 35 | 9659 | 18 | 33701 | 26 | 43660 | | |
| Missouri | 10 | 36220 | 6 | 80908 | 6 | 117128 | West Virginia | 29 | 12464 | 31 | 15933 | 32 | 28297 | | |
| Mississippi | 28 | 15124 | 28 | 17722 | 30 | 52846 | Wisconsin | 16 | 27085 | 10 | 66095 | 11 | 93480 | | |
| Montana | 40 | 5168 | 41 | 6328 | 42 | 12186 | Wyoming | 45 | 1725 | 45 | 2958 | 45 | 4583 | | |

ADD THREE COLUMNS TO EACH DOLLAR VALUE GIVEN ABOVE IN ORDER TO GET OUR ACTUAL NUMBER OF DOLLARS.

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onto their premises; particularly the coccidiosis germ, which is virulently contagious and can raise havoc with all of the birds on a poultry farm once it gets a good start. Some operators will not let you onto their premises if you have been in any other poultry establishment.

One large producer that I know will not let you inspect any of his poultry houses unless you change completely into clean clothes if you have visited any other poultry establishment. Be frank and truthful about this matter, for you would not wish to be responsible for wiping out the life work and savings of any individual, and if you were once suspected of being the carrier of disease germs from establishment to establishment you would not be welcomed by any operator.

For the same reason, operators insist that brooders and other poultry equipment shall be thoroughly disinfected before it is moved from one establishment to another, and that it shall be repainted. When a poultryman makes this request of you in regard to any piece of equipment which you wish to demonstrate to him he is

not being either fastidious or unreasonable, but is asking you to do it for his own protection.

Extensive demonstration of brooders in your territory should not be necessary. The trade papers have been well covered with articles on gas brooding, and the larger operators know about it.

The value of demonstration of brooders lies in creating a desire for a piece of equipment which is easier to handle, is safer, and more reliable. Perhaps a demonstration at the largest establishment in your vicinity might be of value, for, in this industry, as in all others, the little fellow apes the big one. If you do make a demonstration, be sure that the brooder is in perfect condition, that it operates properly, and that it is properly installed. Don't guess at the operating pressure but set it with a manometer or pressure gage.

If you have several brooders on any job or long pipe lines, make sure that the pipe line sizes are correct. This was covered in "The Bottled Gas Manual."* Also, you should keep very closely in touch

* Published by BUTANE-PROPANE News.

TOTAL BIRDS HATCHED IN 1943 BY AREAS IN THEIR NUMERICAL ORDER

Figures compiled from United States Department of Agriculture Reports.

| NUMERICAL ORDER | STATE GROUP AREA | CHICKENS THOUSANDS | BROILERS THOUSANDS | TOTAL IN THOUSANDS |
|-----------------|-----------------------|--------------------|--------------------|--------------------|
| 1 | West North Central | 1084713 | 3912 | 1088625 |
| 2 | Eastern North Central | 701076 | 20437 | 721513 |
| 3 | South Central | 601905 | 34548 | 636453 |
| 4 | North Atlantic | 460830 | 31489 | 492319 |
| 5 | South Atlantic | 337592 | 147300 | 484892 |
| 6 | Western | 224035 | 13963 | 237998 |



A portion of the LP-Gas brooders in a turkey project at Dunbarton, N. H.

with any demonstration. Remember that one failure or case of unsatisfactory operation may do you more harm than a dozen successful ones will do you good. Not only must the equipment be properly installed, but it must be installed in a suitable brooder house. Don't attempt any demonstration unless 100% cooperation in gas brooding methods, as suggested by the brooder manufacturer, is guaranteed to you.

There is another word of warning. Do not guarantee operating costs or fuel consumption. There is sufficient proof in these chapters devoted to the poultry and turkey industries to prove that such costs are in line.

You should, of course, make an allowance for any gas used in testing or setting up the equipment for the first time. After that, the operator should be strictly on his own. If you are positive that you have made the installation properly, there is no reason why fuel

consumption should exceed from $\frac{1}{4}$ to $\frac{1}{3}$ lb. of LP-Gas per chick or poult brooded, even in the most severe climate.

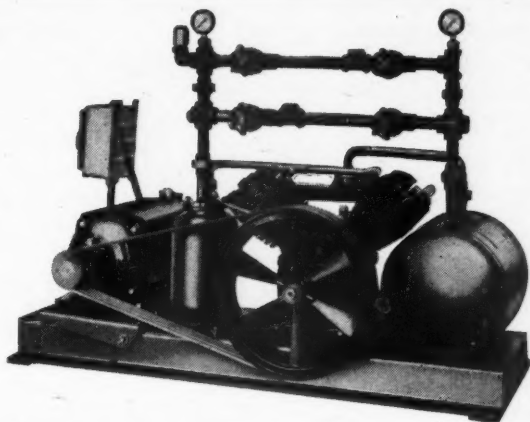
Here is your opportunity to put that idle gas equipment to work in those off-season months when expenses and taxes keep piling up. The demand upon America for foodstuffs will be abnormal for years to come, and the poultry business will expand accordingly.

There are vast sections of this country, such as the granite hills of New Hampshire, which are not good for much excepting the admiration of tourists and the quarrying of tombstones, but they are admirably suited to poultry raising because of their gravel soil and excellent drainage.

If you have any such area in the territory which you serve, you may not only be the means of bringing a thriving business to it by pointing out its natural advantages, but you may build a thriving gas and appliance business by selling gas brooders and torches!

Fast • Economical • Safe

RONEY VAPOR COMPRESSORS for Butane-Propane Transfer



Thousands of gallons of butane and propane are lost each year in residual vapors left in tank cars and truck transport tanks at time of transfer. Only a Vapor Differential System delivers ALL THE GAS YOU BUY.

THREE SIZES TO CHOOSE FROM. ASK US!

The Roney Vapor Differential Compressors are completely assembled and tested units, designed to meet the particular problems of this industry. Many special features—the result of field operation in numerous bulk plants—are to be found in Roney Compressors. They will fit many types of plant operation, with a minimum of alteration to existing systems. In new installations the simplicity of piping and valving will generally show appreciable saving over liquid pumping system.

SAFE—There are no pressures in hose

and lines. No moving parts or rotating shaft stuffing boxes subject to liquid pressure.

FAST—Delivers 30 to 150 gals. per minute, depending on size of compressor. This rate can be maintained consistently—there is no wear as in liquid pumping systems.

ECONOMICAL—The recovery of residual vapor insures sufficient saving to pay big returns on investment. System performs more operations and eliminates wear found in liquid pumping system.

L.C. RONEY INC.

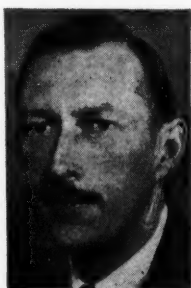
1740-44 W. 59th ST. • LOS ANGELES, CALIF.

POWER

Truck Conversion Potential

A PICTURE of the possibilities of LP-Gas as a fuel for trucks is given in Public Roads Administration Informational Memorandum No. 82, issued by the Federal Works Agency on Mar. 5, 1945.

Incidental to other data accumulated in a survey of the number of trucks reported as operating in the United States, the types of fuel used, other than gasoline, have been segregated.

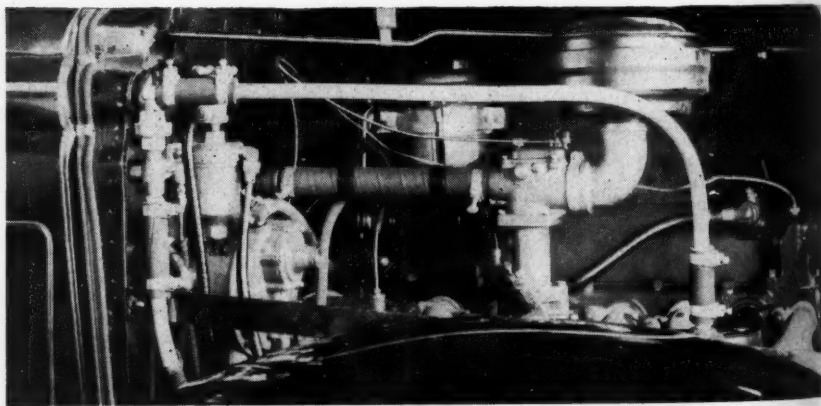


H. W. WICKSTROM

By Harold W. Wickstrom

The total number of trucks operating on LP-Gas is 4222. Of this number 3029 are operated in California where LP-Gas was originally introduced as a motor fuel and where service station distribution is statewide. Texas is next with 257 and the balance spread throughout the country. The only states not having any LP-Gas-powered trucks listed are Delaware, Maine, South Dakota and West Virginia.

There are 7,262 diesel trucks on the roads, most of these being in units having greater horsepower requirements than were available for gas engines prior to the war.



A typical, straight butane carburetor installation made by Ensign Carburetor Co., Ltd.

The survey indicates a total of 3,392,393 trucks registered in the United States.

Prior to the freeze orders on the use of equipment necessary for changeovers in 1942, the rate of conversion of gasoline-powered units was steadily increasing.

What the Future Holds

At the present time there is a backlog of immense proportions from operators experienced in the use of the fuel and with the advent of high compression type engines after the war, the market for LP-Gas as a motor fuel may easily exceed its use for domestic purposes.

The present saturation is approximately .1 of 1% of the automotive market. (Stationary engines and tractor applications are not included.) At \$200 per installation, it represents \$844,400 worth of tanks, carburetors, vaporizers, valve fittings and labor costs. Even when 1% is attained, this amounts to more than \$8,000,000. It may be that the automotive end of the business may be at the stage the domestic end was in 1928. If so, another huge industry will have been born!

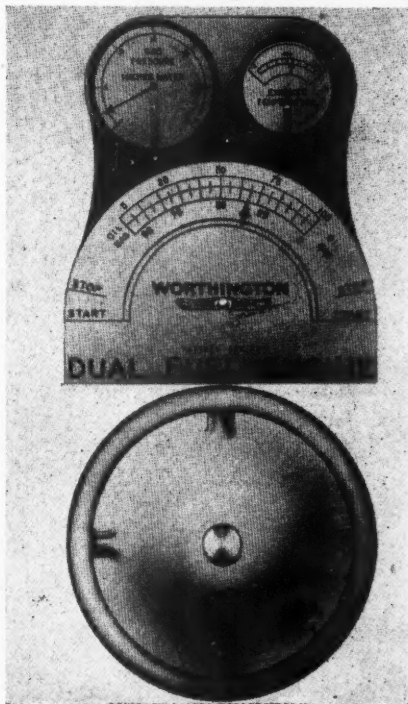
Engine Convertible From Oil To Gas on Diesel Principle

An engine capable of instantaneous conversion from oil to gas fuel without change in load or speed has gone into production at the Buffalo Works of the Worthington Pump and Machinery Corp.

Conversion from one fuel to the other or adjustment of a combination

of both is accomplished by one revolution of a single control wheel. Tests and public demonstrations prove the new product highly successful; the first installation is already operating in a large municipal plant.

The Worthington unit, unlike other "gas-diesel" engines, does not require a high pressure fuel gas supply to the engine. A pressure of two inches of water is used. When operating a gas



Control wheel and dials of dual fuel engine.

engine, pilot oil ignition is used, eliminating electric ignition. Pilot fuel can be used in amounts as low as 5 per cent of the total full load Btu. requirements of the engine.

How to Re-Install LP-Gas Equipment Under Revised L-86

HAVE YOU ever filed a WPB-809 and had it returned, unapproved?

Of course, it could be that your proposed re-installation is not deemed essential. And it could be that you failed to properly fill out the application. Thousands are rejected for this reason.

L-86 provides a method for obtaining justifiable exceptions by filling out Form WPB-809. But current, ever-changing conditions, such as overall supply and demand and critical materials, are factors which influence the judgment of officials in passing upon individual applications.

It is hoped that the accompanying analysis of the re-installation requirements of L-86 will aid dealers in filling out applications. It has been prepared by a proposed "LP-Gas Priorities Service."—Editor.

Order L-86 was revised on Feb. 15, 1945, and LP-Gas installations were "frozen" in their locations. LP-Gas equipment, which was in service on April 1, 1942, may no longer be installed, nor moved and re-installed even by the same user, except with WPB-809 approval. However, locations of some installations may be considered movable, such as those for trucks, trailer houses, and portable well drilling rigs. No changes have been made in L-86 provisions for tank removal or exchange for filling, and for maintenance and repair.

Order L-86 originally was issued to provide control of critical materials and liquefied petroleum gases by limiting new equipment installations. The provision of free re-installation of old LP-Gas equipment has been misunderstood, so that many new installations were

made without WPB-809 approval. The present removal of this provision may be expected to make the Order effective and fair, and to result in fewer but larger butane installations.

WPB-809 applications for butane installations on the Pacific Coast may be approved in certain cases where no additional butane consumption is proposed; for example re-location of a butane installation to give the same service to the same consumer, re-installation of "loaned" butane equipment for the owner, re-installation of butane equipment to meet seasonal needs and installation of additional butane tanks at an existing butane installation.

Tank Must Be Used One

In the last named example, the additional and the installed tanks should both be described in Question 5(b) of Form WPB-809. In all butane applications, the tank should be "second hand" or "used" and should be so described in Question 5(b). In such applications Certification No. 2 and 3 appear to be unnecessary unless installations are to be moved a considerable distance.

WPB-809 applications to install propane tanks to replace butane tanks may be considered very desirable but may be approved only when both the new tanks and the replaced tanks are described in Question 5(b) and when assurance is given, preferably in Question 8, that the replaced tanks will be re-installed only with WPB-809 approval.

CURRENT READING

• Reviews of new books, pamphlets and articles published in recent magazines of interest to technicians and executives in the liquefied petroleum gas industry. Those interested in reading any complete article or book should write to the publications named.

The Regulation and Blending of Natural Gas—H. A. Brown. "Oil Weekly," Jan. 15, 1945, pp. 32-34, 36. Utmost care required for selection of proper regulator which plays most important role in distributing systems. Capacity chart used to determine valve size. Equal pressure percentage blending unit principal explained.

Dehydration of Supply Gas Is Successful in Preventing Freeze-Ups of Pilot Regulators—L. S. Reid. "Petroleum Engineer," Jan., 1945, pp. 194, 197. Small dehydrator installations avoid loss of pressure and ultimate failure on downstream side of main regulator setting.

National Fire Codes for Flammable Liquids, Gases, Chemicals and Explosives, 1945: This 592-page volume, recently published by the National Fire Protection Association, assembles the many standards dealing with these hazards. Superseding the National Fire Codes for Flammable Liquids, Gases, Chemicals and Explosives for 1943, the new volume contains up-to-date information on new chemicals and solvents used in war industries, including information on their fire hazard properties and the best method of fire extinguishment. In addition,

there are six new or revised codes.

This new volume is divided into nine parts: (1) Flammable Liquid Storage and Handling; (2) Oil and Gasoline Burning Equipment; (3) Liquefied Petroleum Gases; (4) Utilization of Flammable Liquids; (5) Gases; (6) Refrigeration and Fumigation; (7) Explosive and Nitrocellulose Materials; (8) Tables of Properties—Hazardous Chemicals, Flammable Liquids; (9) Flash Point Tests.

The book contains many tables and drawings. Page size 6x9, bound in substantial red cloth covers. Price \$3.00 per copy post-paid. National Fire Protection Association, 60 Battery March St., Boston, Mass.

Multicomponent Fractionation: A Simplified Approach to Plate-to-Plate Calculations—H. H. Hummel. "National Petroleum News," Jan. 3, 1945, pp. R-53, etc. Rigorous results for multicomponent fractionation are obtained by what is essentially a modified, more convenient plate-to-plate calculation. The trial and error is thrown primarily into an assumed temperature gradient throughout the column, rather than into the distribution of components. Successive approximations are made of the temperature gradient until a satisfactory check is obtained, only two to three trials usually being necessary. The calculation is particularly suited for predicting the performance of an existing tower, although it is also useful for calculating the number of plates required for a desired separation. It will be of greatest value

where the usual plate-to-plate calculations are otherwise required, especially when there are a number of distributed components. While major attention is given to ideal systems, a suggested approach for certain types of non-ideal systems is outlined.

Precise Fractionation in the Petroleum Industry—P. S. Verity. "Heat Engineering," Aug.-Sept., 1944, pp. 90-96. The term "precise fractionation" is of relatively recent usage and is difficult to define accurately. In a general sense, however, it may be used to describe the separation by distillation of close-boiling materials where at least 30 bubble trays, or the equivalent, are employed. Examples of the use of precise fractionation are given in the description of a modern alkylation unit, and in base stock improvement.

Electronic Engine-Pressure Indicator—J. W. Head. "Electronics," Jan., 1945, pp. 132-135. Quartz crystal unit, inserted in an engine head like a spark plug, converts pressure variations into a pulse wave form requiring an amplifier having essentially flat response from 1 to 20,000 cps. A wide-band oscilloscope reproduces the pressure pattern.

Experimental Determinations of Water Vapor Content of a Natural Gas Up to 2000 Pounds Pressure—G. F. Russell, R. Thompson, F. P. Vance, and R. L. Huntington. "Petroleum Technology," Jan., 1945, 7 pp. With the advent of higher pressures in the operation of natural-gas transmission lines, the removal of water from the gas has become increasingly important in order to prevent condensation or formation of gas hydrate from slowing down or stopping the flow of gas. Intelligent design of

these dehydration or gas-drying plants has been hampered through the lack of experimental data on the water vapor content of natural gas at elevated pressures. In view of this need, this investigation was sponsored by the Southern Natural Gas Co. in the Chemical Engineering Laboratories at the University of Oklahoma Research Institute. Experimental results were obtained on the water-vapor content of natural gas up to 2000 lb. per sq. in. at atmospheric temperatures. The water vapor content at 2000 lb. is approximately two-thirds as much as it is at 1000 lb. Deviations from the ideal gas laws vary directly with pressure and indirectly with temperature.

West Coast Refining and Natural Gasoline Construction Assumes Added Significance—J. H. Kunkel. "Petroleum Engineer," Dec., 1944, pp. 59-66. California refineries have increased their facilities in anticipation of accelerated demand when military emphasis shifts to Pacific war theater. The new plants of the various California companies are briefly described.

New Trends in Utilizing Petroleum Resources—G. Triplett. "Oil Weekly," Jan. 15, 1945, pp. 21, etc. Chemical engineers are learning much about processing not only oil but natural gas as well and promise is that mankind will enjoy many materials not heretofore had because as a raw material petroleum holds greater promise than coal tar which is basis for at least a half million derivatives. Caution is sounded about the influence of politics.

Application of Unit Operations to Fractionation and Other Vaporization Processes—R. L. Huntington. "Petroleum Refiner," Nov., 1944, pp. 127-131. Part 10. Fractionator design.

Butane Rationing Not Likely, Say PAW Advisers

THE industry's subcommittees for Districts I-IV, inclusive, of the Petroleum Administration for War, met in St. Louis on March 16 to discuss problems confronting the liquefied petroleum gas industry and to make recommendations to the PAW for the future.

Walter A. Naumer acted as chairman and C. D. Whitfield as secretary of the all-day meeting.

Included in the subjects that came before the meeting for discussion were those of the supply of butane and propane for 1945; transportation problems; storage; the existing order No. L-86 and the form WPB-809 for exceptions thereto; the new selective service regulations; how control should be established upon future consumption of butane and propane, and methods of disseminating all essential information to members of the industry.

Expressions of those attending the meeting indicated that it is not considered likely that any rationing of LP-Gas will be necessary, but that continued service will be assured to existing users. Expansion of the industry cannot be seen at this time.

Chairmen of the various Districts are as follows:

District I: Walter A. Naumer.

District II: George R. Benz,

District III: Louis Abramson, Jr.

District IV: Dr. R. W. Leslie.

District V, including the Pacific Coast states, Arizona and Nevada, whose problems are different from those of the other four sections, did not meet with the other groups. P. S. Magruder, General Petroleum Corp., is chairman of District V sub-committee.

Mutual Liquid Gas Builds Truck Fueling Unit

The Mutual Liquid Gas and Equipment Co. has opened its new propane service station at 3600 W. Imperial Highway, Inglewood, Calif.

Complete facilities for servicing trucks and cars operating on propane are available. These include a modernly equipped island with oil, water and air. There is a large area in front of the island which makes it possible for the largest truck-trailer units to park or turn with ease. The station is open from 8 a.m. to 8 p.m. and for one-half day on Sundays.

This new filling station, which is only a part of a complete liquefied petroleum gas plant now under construction, is owned and operated by Joseph S. Fagan and William E. Fagan. A bottling platform and fuel storage have also been completed. The rest of the project will include office buildings, truck garage and facilities for producing propane utilization equipment.

Propane Installation Fills Emergency When Natural Gas Supply Fails

ANOTHER "chalk-up" for the dependability of liquefied petroleum gas came recently from the magazine "Newsweek," which proves that whether in heating a house, running an engine or helping to print a magazine—LP-Gas takes it in its stride.

The huge ink-drying ovens of Newsweek's Dayton, Ohio, printing plant are heated with natural gas. During a sudden sub-zero cold spell in the Dayton area, domestic consumption was such that pressure in the gages dropped to from 15 pounds to less than one—and was finally shut off, with but half the press run completed. Quick thinking printers worked to concoct an ink that would dry without heat and got the issue out on time, if not quite up to printing standard.

Verkamp Corp. Solved Problem

Fearful of another such an occurrence with weather uncertain, the production staff went to work to produce the next issue of Newsweek without natural gas. The best possible way was with bottled gas used from portable cylinders.

J. R. Verkamp, vice president of The Verkamp Corp., Cincinnati, large distributors of liquefied petroleum gas, was contacted. Mr. Verkamp obtained permission from the PAW to make the installation and immediately set up a manifold with a bank of 50 cylinders of propane.

In making the conversion to bottled gas, it was necessary to obtain 100 special spring-control valves, new feeder lines and gas mixers. Priorities came through in time and the valves were flown to the job.

With everything installed and ready to go—the natural gas came on again! Back to natural gas went the equipment but in five hours natural gas went off again. This time, however, Newsweek was prepared to carry through its high speed schedule—with an LP-Gas standby, permanently installed for just such an event.

Tire Manufacturing Figures Reveal Rubber Situation

J. A. Krug, chairman of the War Production Board, has released figures on recently revised tire production scheduled for the second quarter of 1945.

The following chart compares scheduled production for the second quarter of 1945 with actual production in the second quarter of 1944.

| Type of Tire | Actual Production Second Quarter 1945 | Schedule Production Second Quarter 1945 |
|-------------------------|---|---|
| Airplane | 378,002 | 330,000 |
| Truck and Bus..... | 3,560,448 | 5,085,000 |
| Passenger & Motorcycle. | 4,022,192 | 3,165,000 |
| Tractor-Implement | 491,210 | 880,000 |

"The schedules indicate the number of tires by classification that can be made with the amount of carbon black that can be supplied domestic tire plants," said Mr. Krug.

"Carbon black is now the limiting factor in tire production. New facilities to produce additional amounts of carbon black are being rushed into production."

DUTCH OVEN GAS RANGES

a "natural" for any Bottled Gas Dealer's Sales Program

HERE'S why the DUTCH OVEN Gas Range should be included in every Bottled Gas Dealer's Post-War Merchandising Program:

The Dutch Oven Gas Range is the ideal range for suburban and rural markets. It is a retained heat range, offering fuel and food economies that will appeal to Bottled Gas users. The Dutch Oven Gas Range will build good will and customer satisfaction for you.

The Dutch Oven Gas Range is A.G.A. approved for Bottled Gas Use.

It is the only range that automatically turns off the gas and keeps right on cooking!

The Dutch Oven is a quality gas range—it will eliminate costly, long-distance service calls.

5 The Dutch Oven Gas Range, with its high standard of performance, will help you sell new customers for bottled gas service.

6 The Dutch Oven Gas Range is nationally advertised in leading farm magazines.

7 A quality gas range, it offers a better profit for bottled gas dealers.

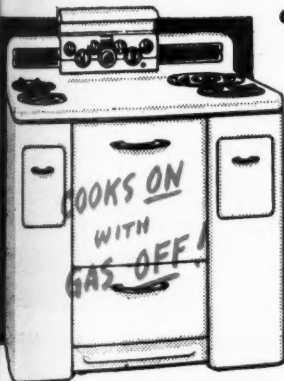
8 The Dutch Oven Dealer Franchise will be one of the most valuable and profitable in the entire industry.

GLOBE AMERICAN CORPORATION

Kokomo, Indiana

General Sales Office

800 Field Bldg., 135 S. LaSalle St.
Chicago 3, Illinois



Dutch Oven

Gas Ranges

Artificial—Natural—Bottled

Only Dutch Oven automatically turns off the gas and keeps right on cooking

How LP-Gases Are Made in New Plant

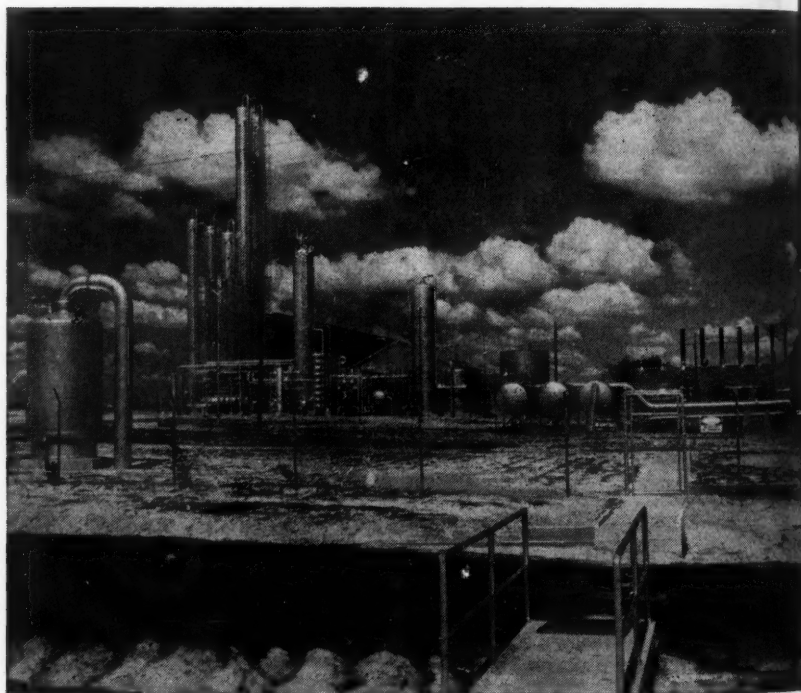
THERE has recently been completed, by the Natural Gasoline Corp., an affiliate of Warren Petroleum Corp., and Humble Oil & Refining Co., a gasoline plant in the Hawkins Pool, Wood county, Texas. This plant, utilizing all available material from two plants which were dismantled, was designed to process 15,000,000 cubic feet of gas per day, with atmospheric pressure at the field separators and six inches vacuum at the plant, according to Rex L. Lane, of Warren Petroleum Corp.

After describing many other fea-

tures of the plant, Mr. Lane refers the recovery of liquefied petroleum gases as follows:

The composite raw gasolines are pumped to a 34-tray de-ethanizer operating at 450 pounds gage. The ethane and lighter is fractionated out of the gasoline and taken overhead where enough of the ethane is condensed to maintain reflux to the column. All excess gases are vented as residue. Column temperatures are approximately 220° F. base, and 110° F. top.

Raw gasoline from the reboiler



New, natural gasoline plant in the Hawkins Pool, Wood county, Texas, where 46,500 gals. of LP-Gases are made daily.

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the de-ethanizer is then fed directly to a 34-tray depropanizer which operates at 250 lbs. gage, with a top temperature of 120°F., and a base of 220°F. The propane is taken overhead and condensed with reflux being taken from the accumulator and the propane run to storage. Gasoline from the reboiler is fed to a debutanizer column.

The debutanizer is a 34-tray column and operates at 130 lbs. gage with temperatures of 160°F. top and 260°F. bottom. Iso-butane and normal butane are taken overhead and totally condensed through open coil sections. These products are fed to a butane splitter. The base products, pentanes and heavier, are fed to a de-iso-pentanizer.

The 64-tray butane splitter oper-

ates at 110 lbs. gage, with temperatures of 130°F. top and 160°F. base. Iso-butane is carried overhead, condensed and sent to storage.

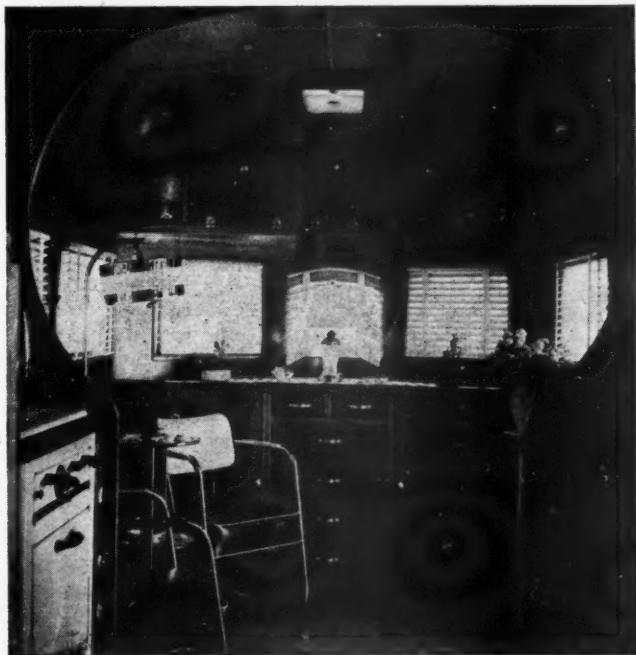
The de-iso-pentanizer column, of 64 trays, operate at 55 lbs. gage with a base of 205°F., and a top of 172°F.

Iso-pentane is taken from the top of the column through condensers to storage. Bottoms from the reboiler, an 8:5 to 9.0 RVP gasoline, are transmitted to storage also.

An average daily production will approximately show—

| | |
|-----------------------|--------------|
| Propane | 14,500 Gals. |
| Butane | 14,000 Gals. |
| Iso-Butane | 12,000 Gals. |
| Iso-Pentane | 6,000 Gals. |
| 8.9 RVP Gasoline..... | 15,500 Gals. |
| TOTAL | 62,000 Gals. |

Interior of de luxe
road home, showing
an LP-Gas range. This
trailer house is typi-
cal of many installed
for defense workers.



Faded Garments Cause Gas Dealer to Make Revealing Research

RECENTLY P. G. Boyd, vice president of the Airlene Gas Co., Fulton, Ky., received a complaint from one of his LP-Gas customers who handles ready-to-wear clothes. The complaint stated that certain garments fade within a short time after being placed on the racks and it was wondered if the LP-Gas space heaters installed could be causing the fading.



P. G. BOYD

Unable to determine whether or not this was true, Mr. Boyd made inquiry from the American Gas Association to see if there were any similar experiences upon which they could predicate an answer.

Mr. Boyd's inquiry and the answer of C. George Segeler, engineer of utilization, American Gas Association, appear below:

Mr. Boyd's letter:-

"A customer of ours has posed a problem which we are at a loss to understand and we need assistance. In order that you will have a clear picture of the information available we propose to go into detail about the installation, gas used, etc.

"This customer operates several ready-to-wear stores, one of which we

service with straight butane-propane gas. Another store located in Union City, Tenn., operates on butane-air mix. All the other stores use coal for heating fuel.

"In our installation and the one at Union City, a vented heater is the principal heat source and a small open faced heater is used for offside heating. Our installation is a 90,000 Btu. heater on automatic control and one other space heater. It is not known just what equipment is used at Union City but we are informed it is similar.

"This customer says that blue dresses fade badly, but not in the Union City store or any of the others. He assures us that it is very troublesome and expensive.

"The only difference we can conclude between the Union City installation and ours is that Union City is operating on straight butane, whereas we use a 40% propane - 60% butane fuel.

"Now if Union City gives no trouble and our gas does, it would seem to mean either the heater is not venting properly or the presence of propane can in some way influence the dyes. Our customer wrote the manufacturers of the clothes and they claim the dyes are satisfactory. Since the dresses are shipped from one stock to all stores, this would bear out the manufacturers and still make our installation seem to be at fault."

Mr. Segeler's reply:

"In answer to your inquiry of Feb. 23, I believe that information is available which will explain the cause of

to fading of blue dresses. I believe that you check carefully with your customer you will find that only those dresses which are made with cellulose acetate rayons are subject to fading. Neither woolen nor cottons nor other types of synthetic yarns are subject to this fading. Silk, as you know, is rarely available at this time.

"Since the difficulty was largely confined to a single product, you can appreciate that it has been thoroughly investigated by textile chemists. Research workers in England and the United States have demonstrated that the blue, brown and red dyes used for cellulose acetate rayons are subject to fading when exposed to oxides of nitrogen even when the quantities of the latter must be measured in parts per million.

"The oxides of nitrogen are produced whenever air is heated to a sufficiently high temperature. They are, therefore, formed when gas is burned and the flue products allowed to escape into the room. They are formed when electric heaters are operating. They are formed out-of-doors during thunder storms.

"As a result of this situation, the National Retail Dry Goods Association has advised all of its members to be on their guard against "gas" fading, the word gas referring to oxides of nitrogen and not to your gas.

Problem Solved for Postwar

"The Eastman Kodak Co. has developed, for postwar use, dyestuffs which will be immune to this reaction but they have not come into widespread use as yet.

"In tracing the trouble, I think you will have to find out whether all of the flue gases are venting at all times. In certain types of heaters part of the flue gases may be venting. In radiant type heaters you also must consider

the possibility of room air striking the heated refractory and thereby forming the troublesome nitrogen oxides.

"I am sorry that I cannot be more encouraging to you in this connection but you have described a difficulty which has long been recognized and the means to overcome it must be based on the local circumstances."

Five New 100-Octane Plants Scheduled for Construction

Rising demands from the army and navy for 100-octane aviation gasoline have caused PAW to schedule construction of five new plants and to study proposals for several more.

The plants now scheduled are one for the Texas Co. at Lockport, Ill., two for the Standard Oil Co. of Indiana at Whiting, Ind., and Sugar Creek, Mo., one for Leonard Refineries, Inc., at Alma, Mich., and one for the Shell Oil Co., at Houston, Texas.

The new facilities approved by PAW will be built entirely by private capital at a cost of \$78,000,000. The War Production Board is in the process of approving use of critical materials for four of them, while priorities for the fifth await clearances relating chiefly to manpower available at Houston.

Ruling Made on Shipping Used Gas Cylinders Abroad

The Foreign Economic Administration announces that used metal gas cylinders may now be exported under general license when filled with commodities which have been authorized for export under an individual license or a general license.

New metal gas cylinders whether filled or unfilled continue to require an individual export license.

TECHNICAL

Rhenium as a Catalyst in Lowering Vapor Pressure of Liquefied Butane

Letter of Inquiry

"WE are seeking a catalyst or a chemical that can be introduced into the liquefied petroleum gas "butane" for the purpose of lowering its natural vapor pressure, without necessarily lowering its high inherent octane rating. Such a catalyst or chemical must not be necessary in large quantities for the purpose, in order to avoid weight penalties.

"We are also seeking, for use in another and different process, a chemical or catalyst that will either lower the initial boiling point of butane; or else provide, when added to the liquid butane, a catalytic or chemical heat that will aid in the vaporization of butane at lower temperatures than is now practical for such vaporization."

Answers

By Dr. Lyman J. Briggs, Director,
National Bureau of Standards,
Washington, D. C.

Catalysts are materials which by their presence, alter the speed of a reaction, and in certain circumstances, may direct reactions. They are not known to change the physical properties of a compound, such as the vapor pressure or boiling point of butane. The vapor pressure of butane may be lowered by cooling. Its boiling point may be

● THE Technical Advisory Service of the Smaller War Plants Corp. is a Government agency that obtains answers to technological problems facing small plants not equipped with research laboratories.

In 1944, William C. Brown, Consultant of the Seattle office of this service, was asked for "specific information covering vaporization at various temperatures of liquefied petroleum gases when stored aboveground in given size tanks." Two of the answers he obtained from authorities were published in Butane-Propane News, one in May, 1944, and the other in January, 1945.

Now Mr. Brown has an inquiry regarding a catalyst to use in lowering the vapor pressure of butane gas, and answers from two technical experts are given herewith.—Editor.

lowered by decreasing the pressure above the liquid.

Rhenium occurs in molybdenum and has found use as a catalyst for dehydrogenation of alcohols, and for desulfurization and dehydrogenation of coal, tar, and petroleum oils. Its price in 1939 was about \$4 per pound.

Ionization is the basis for analysis of petroleum gases in a process recently developed by O. L. Roberts, H. W. Washburn, and L. M. Leum, at The Atlantic Refining Co., Philadelphia, Pa. It is thought that the adaptability of the process is restricted to very small amounts of material. More detailed information probably may be

obtained from The Atlantic Refining Co.

In general, oppositely charged bodies attract, rather than repel each other, as stated in your inquiry. Similarly charged bodies repel each other. Hence ionization would not reduce vapor pressure.

By Paul D. Foote, Executive Vice President, Gulf Research & Development Co., Pittsburgh, Pa.

The simplest way of lowering the vapor pressure of butane without necessarily lowering the octane number would be to dissolve in it a proportion of a higher molecular weight hydrocarbon of high octane number. The only one commercially available would be iso-octane, which is now manufactured on a large scale as a basic constituent of aviation gasoline. Commercial iso-octane has an octane number of the order of 94, whereas butane itself has an octane number of about 95. The lowering of the vapor pressure would be in proportion of the amount added. Butane boils at about 32° F. and iso-octane in the neighborhood of 200-210° F.

The vapor pressure of butane could be raised by adding a proportion of propane. This would have the effect of lowering the initial boiling point of the butane so long as the vaporization was not performed through an efficient fractionating column. Commercial butane as now sold contains from 3 to 5% of propane, and it could be bought in any proportion desired. The vapor pressure of butane is of the order of 40 pounds at ordinary

temperatures, and that of propane is near 200 pounds. The increase of vapor pressure would be in proportion to the amount added.

We do not have any information on the ionization process which you mentioned. You are correct in saying that a related process is employed in the evacuating of the tubes used for neon signs. The tubes are flashed before evacuating and filling with the desired inert gas. This has the effect of bombarding the glass walls with charged particles, and the result is the displacement of absorbed gas, an equivalent of baking out to improve the vacuum attained.

By Dr. Gustav Egloff, Director of Research, Universal Oil Products Co., Chicago, Ill.

There has been a great deal of work carried on in an endeavor to lower the vapor pressure of butane. I know of no catalyst or chemical that will do the job. Your client is asking for something on which a great deal of work has already been carried on in different laboratories. I know of no isomerization process that will raise the boiling point and lower the vapor pressure of butane. I assume they mean by "isomerization process" an electric discharge of some sort across the field of gaseous butane. Some isomerization of electric discharges break down butane and build up higher molecular weight hydrocarbons.

By R. G. Kelso, Carbide and Carbon Chemicals Corp., N. Y. City

We do not believe the lowering and raising of the natural vapor

TECHNICAL

pressure of butane is feasible by chemical or catalytic means. However, it is quite possible that the vapor pressure could be lowered by the addition of a hydrocarbon higher in the aliphatic series such as pentane, hexane, heptane or octane. By adding something like iso-octane which has a perfect octane rating, the vapor pressure of the butane-iso-octane mixture would be lowered proportionately to the amount of iso-octane present. This is true because iso-octane has a lower vapor pressure and exerts its own partial-pressure in the mixture.

Conversely, it is possible that the vapor pressure could be increased by the addition of a hydrocarbon lower in the aliphatic series such as ethane, or propane. Both of these compounds have a higher vapor pressure than butane and would increase the vapor pressure of the butane-ethane mixture in proportion to the amount of ethane. We are not familiar with the electrical process of "Ionization" which you feel may be satisfactory in lowering the vapor pressure of butane.

Drilling Ban Extended on LP-Gas

BECAUSE of continued scarce supplies of butane and propane-butane mixture, it has been necessary to extend indefinitely a restriction against the use of those fuels for drilling oil and gas wells in areas where natural gas is available as a substitute, Deputy Petroleum Administrator Ralph K. Davies announced on April 6.

Butane is essential both in the production of 100-octane gasoline and

synthetic rubber, while propane is in large demand as both regular (firm) and standby fuel in many plants. In order to amplify supplies for these purposes, the use of these gases as fuel in oil and gas drilling was curtailed by a formal order (Petroleum Directive 79, which became effective Nov. 1, 1944).

At the time the directive was issued, Mr. Davies said, it was expected that sufficient liquefied petroleum gas would be available to permit removal of the restriction on their uses as fuel for drilling on April 1, 1945. Current demand for liquefied petroleum gas for war manufacture and essential civilian use is such, however, that it has been found necessary to extend the restriction indefinitely by amendment to the original directive, Mr. Davies said.

As under the original directive, petroleum operators may still ask exceptions from the restrictions in cases where they believe compliance would work exceptional or unreasonable hardships on them. Applications for exception should be filed with directors in charge of PAW districts.

Commercial Equipment Men To Cooperate With Dealers

The Commercial Gas Equipment Division of the AGAEM in a recent series of meetings has developed a broad program of sales promotion activities. These include a comprehensive plan of cooperation with kitchen equipment dealers as well as participation in the several recommended industry shows, if they are held.

S. E. Little, American Stove Co., chairman of the division. Subcommittee chairmen are Jack Heilig, Sales (Membership); Bob Patrick, Shows, and Sherry Shermire, Detroit-Michigan Stove (Sales Promotion).

New Products

Water Heater

The first sales agreements on Servel gas water heaters in the liquefied petroleum gas field were signed recently by Geo. S. Jones, Jr., vice president in charge of sales for Servel.

Servel's new line of water heaters will be available as soon as restrictions on peacetime manufacturing are lifted. In this new line Servel will offer the 20, 30 and 45 gallon models. All heaters will be of the automatic storage type with 100 per cent safety controls on main burner and pilot. In

the Servel line a spherical tank is used in the 20-gallon model and elongated spheres in the 30 and 45 gallon sizes. Tests indicate exceptionally high efficiency and low standby heat loss in this design.

The overall dimensions of the 30-gallon model are: 24 in. wide, 44½ in. high and 26¼ inches in depth, including the draft diverter.

One of the outstanding features of the new Servel gas water heater is the amount of insulation Servel engineers have been able to use in this heater.

Vaporizer

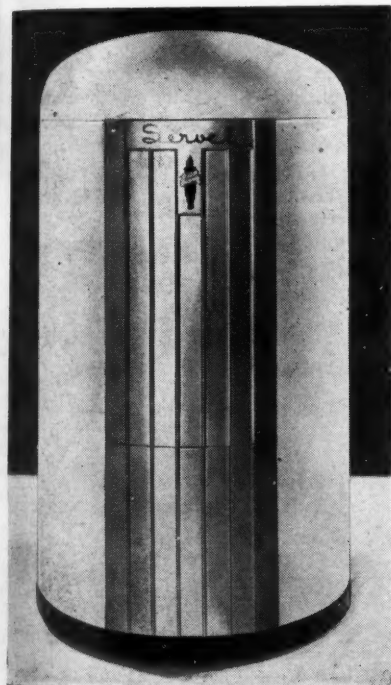
The American Liquid Gas Corp., 1109 Santa Fe Ave., Los Angeles, announces the production of a direct-fired vaporizer with automatic controls. Tests have shown that this unit will work satisfactorily in cold and snowy climates, high altitude areas, as well as in moderate climatic conditions.

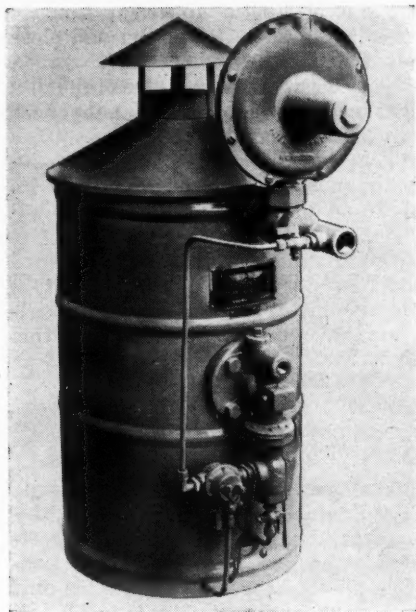
This is a direct-fired vaporizer for maintaining constant gas pressure and Btu. heating value to the appliances when low temperature and heavy fuel demand periods cause low pressure and fractionation of LP-Gas fuels.

Its maximum rated capacity is 13 gal. liquid fuel per hour.

Being completely automatic and self-contained, the ALGAS Model 1300 "Vaporator" is easy to install and economical to operate. There are just two connections to make—the gas outlet to appliances, and liquid fuel inlet from storage tank. Outside utilities, such as water and electric power, are not required. Operates on either aboveground or buried LP-Gas tank installations.

It is substantially constructed—sheet steel housing, brass control





valve assembly, heavy steel vaporizing sphere with steel float to handle 250 lb. per sq. in. working pressure, ample sized main burner, proven pilot valve assembly, 100 per cent safety thermo-shut-off valve, internal pressure relief valve, regulator to control gas pressure to appliances—proven principles of large gas plant equipment used throughout.

Crated shipping weight 87 lbs.

Equipment now available in limited quantities on L-86 certification and priorities. Write for Bulletin V-1.

Relaxed Controls Will Come With Victory in Europe

The War Production Board's "Victory-in-Europe" program for the progressive freeing of the national economy from wartime controls, summarized in the report recently sub-

mitted to the President and Congress by James F. Byrnes, former director of War Mobilization and Reconversion, was outlined April 3 by J. A. Krug, WPB chairman.

Mr. Krug said that the objectives announced by Mr. Byrnes represent the established policy of WPB to relax and to revoke material and production controls as rapidly after V-E Day as may be consistent with safeguarding the continuing all-out war effort against Japan. He emphasized, however, that such a proposed program must be tentative and that revisions, reflecting the continuously changing war situation, will prove necessary from time to time.

H. M. Brown, District III Director, Resigns from PAW

Deputy Petroleum Administrator Ralph K. Davies announced March 31 that he had accepted with regret the resignation of Henry M. Brown, director of natural gas and gasoline for the southwestern States (PAW's District III), with headquarters in Houston, Texas. The resignation became effective March 31.

Mr. Brown joined PAW September 29, 1943.

New Priority Form Shorter But Same Facts Required

The War Production Board has issued a revised Form WPB-541 for use in applying for priority assistance. The new form is abbreviated but requires essentially the same information as formerly.

Exporters operating under general licenses should send their WPB-541 to the nearest WPB field office. Exporters operating under all other licenses should send the form to the FEA, Washington 25, D. C.

The LP Gas Industry is Tite Seal BOUND



- Heat Proof
- Cold Proof
- Pressure-Tite
- Vibration Proof
- Non-Hardening
- Impervious to
Acids, Oils,
Gasoline,
Water etc.

When you use TITE SEAL to prevent leaks of liquids and gases your worries are over.

TITE SEAL is so unbelievably tough that it is used for the most rugged jobs in the aviation, automotive, marine and railroad fields . . . so plastic

that it services the finest machined joints and delicate gaskets perfectly.

TITE SEAL is the mechanic's friend. Because it never hardens, it permits easy disassembly even after long periods of service. Because it contains a powerful lubricant it prevents rust and corrosion of studs, bolts, etc., and preserves gaskets, rubber fittings, etc.

Always specify TITE SEAL to leakproof and preserve all metal-to-metal and metal-to-gasket surfaces and connections.

Brush-On Aviation Grade is the ideal compound for plant maintenance, installation and service work. Packed in 4 oz. and pint cans with Brush-In-Top; also in quarts and gallons.

For additional information on TITE SEAL write

RADIATOR SPECIALTY COMPANY

CHARLOTTE 1, NORTH CAROLINA

RADIATOR SPECIALTY COMPANY OF CANADA, LTD. TORONTO 2
GOLDEN STATE RUBBER MILLS. LOS ANGELES 1, CALIF.

THE TRADE

Anchor Petroleum Co. has purchased the Cimarron Gasoline Corp. of Tulsa, according to a recent announcement. Anchor executives state that the entire 100% of the Cimarron company stock has been secured.

This includes the two natural gasoline plants operated by Cimarron and located at Coyle and Guthrie, Okla. These plants will add greatly to Anchor's output, inasmuch as the combined capacity for the production of natural gasoline and liquefied petroleum gas from the two plants approximates 50,000 gallons per day.

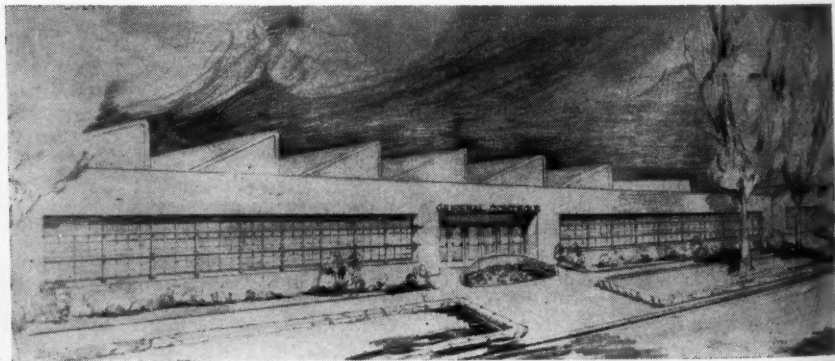
General Controls Co., Glendale, Calif., manufacturer of electro-magnetic control valves, announces the completion of an expansion program that will soon put three acres of factory space under roof. The immediate expansion includes a processing plant, with 10,000 sq. ft. of space, housing the heat treating, anodizing, mechanical deburring, sand blasting and painting departments.

In addition, a new, modern office building will soon be ready for occupancy. This building measures 235 x 45 feet., and will house the executive offices, the administrative, sales, advertising and sales promotion departments. Upon completion, this move will make available an additional 10,000 feet of factory production space.

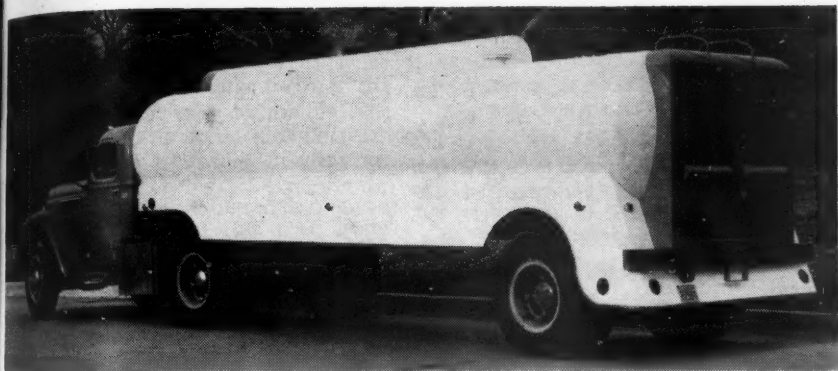
Kerotest Manufacturing Co., of Pittsburgh, is one of the fortunate companies to receive the fifth and final gold star for its Maritime "M" pennant in recognition of continuous outstanding production of essential valves and fittings for the U. S. Maritime Commission.

George L. Schwartz joined the **Cleveland Distributing Co.** on April 1 as sales manager in charge of all the marketing activities of the company.

Mr. Schwartz, a native Cleveland, is intimately familiar with the appliance business and is particularly well



New Glendale, Calif., office building of General Controls Co.



A NAME THAT STANDS FOR QUALITY

McNAMAR
L-P GAS TRANSPORTS
"WITH PROVEN PERFORMANCE"

PROPANE

BUTANE

GREATER PAYLOAD

HIGH TENSILE STEEL

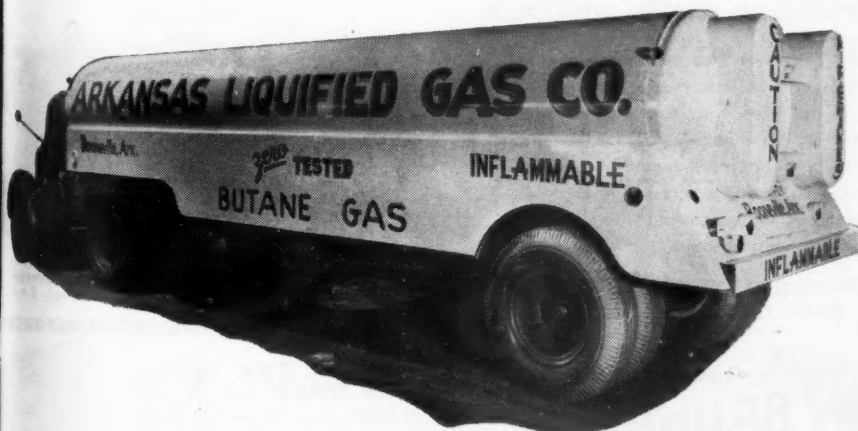
MATERIALS IN STOCK FOR EARLY DELIVERY

Write or Wire for Specifications and Prices
SPECIALIZING IN YOUR TRANSPORT PROBLEMS

McNAMAR BOILER & TANK CO.

P.O. BOX 868

TULSA, OKLAHOMA



fitted to assist dealers with their promotional activities, based on his broad experience in both the retail and wholesale end of the appliance field.

The G. S. Blodgett Co. Inc., has prepared a folder for the commercial trade entitled "The Commercial Cooking Load and How to Go After It", according to Robert F. Patrick, manager of the company's oven department.

This folder discusses market survey, methods of studying the prospective field and practical ways to sell restaurants, road stands, hospitals, bakeries and other commercial institutions. The card form for permanent records, shown on the back of the folder, is alone worth the trouble of sending for this bulletin, which may be had upon request from the company at 53 Maple St., Burlington, Vt.

The Superior Valve & Fittings Co., Pittsburgh, on April 18, observed the seventh anniversary of the founding of the company.

Kenneth M. Newcum will take the responsibilities of vice president, specifically in charge of engineering and development, and Willis A. Siegfried, who has for some time past assisted Mr. Newcum, is being made sales manager and will be responsible for sales policies and advertising.

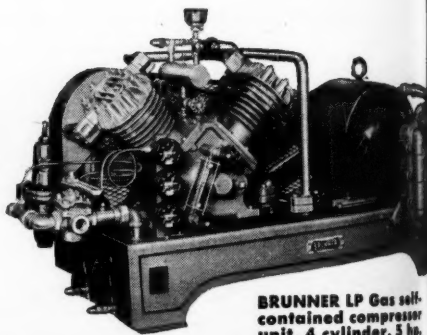
The Estate Stove Co., Hamilton, Ohio, has recently placed in the hands of all of the company's wholesale distributors a graphic presentation, or "visualizer," which embodies several unique features.

A limited number of the presentations are now being placed with distributors for the use of their salesmen in franchising dealers for postwar

500 to 1000 lbs. LP Gas saved per tank car wherever Brunner units operate

Liquid Petroleum Gas operators using the Brunner LP Gas Unit recover 500 to 1000 lbs. of gas from every tank car unloaded. This saving alone quickly pays for the initial cost of the Brunner self-contained unit. And because LP Gas is a necessity in many defense areas, this gas saving is important as a conservation measure.

BRUNNER MANUFACTURING CO.
UTICA 1, NEW YORK, U. S. A.



BRUNNER LP Gas self-contained compressor unit, 4 cylinder, 5 hp.

WRITE FOR THIS NEW FREE BOOKLET

It describes the Brunner LP Gas Unit and contains more illustrations, diagrams, tables and valuable information on the handling of LP Gas than any booklet ever issued.



distribution of Estate ranges and heaters. Later, it is planned to make separate sections of the presentation available to dealers for their use in telling the product story to consumers.

C. S. Stuckenholtz, sales manager for the W. J. Schoenberger Co., of Cleveland, manufacturer of valves and fittings for the LP-Gas industry, announces the appointment of Fred F. Alleman as West Coast manager.



F. F. ALLEMAN

Mr. Alleman's offices are located at 1709 West 8th St., Los Angeles.

Dresser Industries, Inc., formerly of Bradford, Pa., opened new centralized administrative offices March 19 at 1130 Terminal Tower, Cleveland, according to H. N. Mallon, president. The new offices will also reduce executive travel time to the company's 18 different plants by providing a more central location for headquarters.

Newest members of the Dresser Industries group, as recently announced, are Payne Furnace Co., and Kobe, Inc., both of California. Another company, Day & Night Manufacturing Co., also of California, is now in the process of acquisition.

Servel Inc., Evansville, Ind., recently became the first three-time winner of the National Safety Council's "S" pennant for distinguished service to safety.

The large two-starred flag was presented by Forrest E. Long, executive manager of the National Safety Coun-

PROPANE—New facilities will permit CITIES SERVICE to offer the LPG trade substantially larger volumes of PROPANE in 1945.

CITIES SERVICE experience in the LPG business covers a period of over 15 years. To the LPG distributor seeking a dependable source, CITIES SERVICE therefore offers attractive opportunities.

In LPG as well as in so many other fields—

CITIES SERVICE
means
GOOD SERVICE

**CITIES SERVICE
OIL CO. (Del.)**

Bartlesville, Okla.

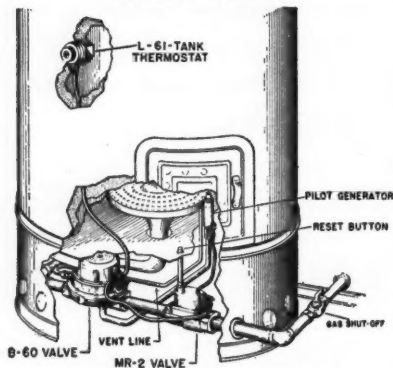
Other Sales Offices:

CHICAGO, CLEVELAND, KANSAS
CITY, ST. PAUL, TORONTO

GENERAL CONTROLS

MR-2 Safety gas valve

WIRING DIAGRAM
ALL GAS WATER HEATER
CONTROL SYSTEM



In the above diagram, the MR-2 is used as an out-pilot safety control. No outside current is required. If all conditions are safe, MR-2 will hold open until released by pilot-flame failure. This hook-up should suggest many other applications and set-ups for overlimit and safety control. Handles manufactured, natural or L. P. gases.

For further information on the MR-2, or other G. C. Magnetic Controls, write the nearest Factory Branch, Distributor, or direct to

GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

FACTORY BRANCHES: PHILADELPHIA • ATLANTA
BOSTON • CHICAGO • KANSAS CITY • NEW YORK
DALLAS • DENVER • DETROIT • CLEVELAND • HOUSTON
SAN FRANCISCO • SEATTLE • PITTSBURGH
DISTRIBUTORS IN PRINCIPAL CITIES

cil, to Dr. Thomas Dobbins, medical and safety director for Servel.

"Servel's consistently reducing accident record is proof," Mr. Long said, "that hazard can be removed from industry despite wartime production schedules."

Three new members have been added to the A. O. Smith Corp. southwest district sales force, according to an announcement by J. E. Woodall, manager of A. O. Smith's home appliance division.

They are R. C. Anderson, sales manager, and Buster Welch and E. E. Edge, sales representatives of the home appliance division. Norman A. Johnson has been appointed field representative of the A. O. Smith Corp., Seattle office.

Radiator Specialty Co.'s Los Angeles representative, Leon Kraft, who has been concentrating in the past upon the accounts of a subsidiary company's rubber products, now expects to devote much of his time to presenting "Tite Seal" sealing compound to the liquefied petroleum gas industry in California.

After eight years as sales engineer at the Shreveport office of Westcott and Greis, division of American Meter Co., Val Link is now serving in the same capacity at that company's Dallas branch.

J. Warren McMillan, American Pipe & Steel Corp., Alhambra, Calif., has recently made a survey of Arizona dealers to determine the postwar potential for tanks.

At the annual meeting of the stockholders of the Shell Oil Co., Inc., in New York, P. E. Lakin, vice president in charge of marketing, New

THE BOTTLED GAS MANUAL

A field guide and text
book for dealers, sales-
men and servicemen

352 Pages of Answers to Every Day Questions About Liquefied Gases, Appliances and Equipment

These Are the Chapter Headings

What Is Propane?
The Behavior of Gases
Heat and Temperature
What Goes On Within a Propane
Cylinder?

The Simple Regulator
Regulator Manifolds
Regulations—Equipment Selection
and Installation

LP-Gas Pipe Lines
Testing for Leaks and Adjusting Burners
Fundamentals of Thermostats

Pilots and Pilot Controls
Burner Design and Application

Appliance Conversions
Facts About Water and Water Heaters
Types of Water Heaters
Selecting and Installing the Water Heater
Competitive Fuels—Wood
Competitive Fuels—Coal
Competitive Fuels—Oil
Competitive Fuels—Electricity—
Rates and Refrigeration
Competitive Fuels—Electricity—
Cooking and Water Heating
Gas Lighting
Space Heating
The Tools of Our Profession

We pay postage on orders accompanied by check or money order.
In California add 10c for sales tax. In Canada add 40c for excise tax.

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SPECIAL OFFER
25% Discount on All
Orders of 10 or More.

\$4⁰⁰
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Gentlemen: Please send me copies of The Bottled Gas
Manual for which I am enclosing check (or money order) for \$.....

Name Position.....

Company.....

Address..... City and State.....

MAY — 1945

109

These POSTWAR COFFEE URNS will be different



Blickman postwar coffee urns will have many new features to help increase your LP-gas sales and build customer good-will.

Our engineers and designers have incorporated major developments which spell definite advances in coffee brewing. These urns will make uniformly good coffee, be dependable, trouble-free and long-lasting. Your customers will be able to choose from a large selection of styles and sizes, including our famous stainless steel urns—the finest obtainable.

We are receiving many inquiries regarding postwar delivery of our coffee urns. Send us your name to be put on our postwar priority list.

3-Piece Battery
Stainless Steel
Coffee Urns



S. BLICKMAN, INC.

Manufacturers of Food Service Equipment
2105 Gregory Ave. • WEEHAWKEN, N. J.

York, and Dr. E. F. Davis, vice president and the company's chief consulting geologist, Los Angeles, were elected directors, it was announced March 21.

A market and sales research department, recently organized by Stanley E. Little, vice president in charge of sales, is the latest step of the American Stove Co., Cleveland, in its program of preparation for the postwar period.



MARC PENDER

The new department is under the management of Marc W. Pender, who has been with American Stove since 1929.

George T. Horton, president of Chicago Bridge & Iron Co., died suddenly March 19.

Mr. Horton had been associated with the company, founded by his father, Horace E. Horton, since 1880 and served as its president since his father's death in 1912.

The Steel Shipping Container Institute Inc. at its annual meeting March 26 at the Waldorf Astoria re-elected Livingston B. Keplinger, vice president of Rheem Manufacturing Co., as president for the ensuing year.

Roy A. Dudley has joined the staff of the Hoyt Heater Co., Los Angeles, where he will be employed as chief engineer in charge of production design and tooling.

Mr. Dudley was formerly with the

OUR 60th YEAR OF DEPENDABLE SERVICE

DESIGNERS and
FABRICATORS of

A COMPLETE "MOSCO" LINE
OF LP-GAS CONTAINERS

MOSHER STEEL CO.
DALLAS HOUSTON TYLER

REZNOR HEATERS IN NAVY HOSPITAL

More than a hundred Reznor U S 110's, four to each ward, keep Uncle Sam's wounded fighters warm in the Navy's Fleet Hospital at San Francisco.



Directly from Pacific fighting zones, the Navy transports wounded men, after first aid treatment, to this fleet hospital in San Francisco.

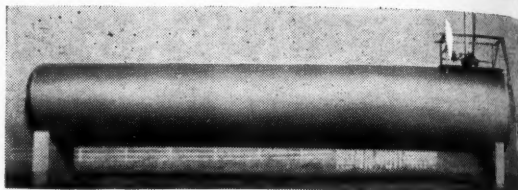
The buildings cover 37 acres and the heat for all of these buildings stems from always dependable gas-fired Reznor US 110 unit heaters, of which there are more than a hundred in this installation. In each of the 23 wards, two Reznors are suspended in the center, facing in opposite directions. Another pair is placed at either end.

REZNOR REZNOR MANUFACTURING CO.
304 JAMES ST. - MERCER, PENNA.

"GAS HEATERS EXCLUSIVELY SINCE 1888"

AN EXPANDED INDUSTRY ... and New Jobs

It will pay you to take advantage of DOWNTOWN's engineering consultation, and years of experience. When in the market for propane storage tanks either for surface or underground use, it is important to choose carefully a fabricator with a specialized knowledge of design and manufacture.



Propane Storage Tank fabricated at DOWNTOWN.

Our engineers can be of help to you in making a wise choice of equipment when you are ready to place your order. We will work with you on preliminary plans and specifications. Inquiries welcome . . . write us today.

The removal of war-time restrictions on materials necessary to the development of the Propane industry will mark an expansion in low priced L-P Gas service.

These relaxed restrictions will have three-fold benefits: (1) City conveniences for cooking, heating, refrigeration and supplying hot water for rural and small town residents. (2) New jobs for returned service men who will set up homes and be potential users of L-P Gas. (3) New business for the L-P Gas operator.

Now is the time for operators to get ready. Begin NOW to reap the benefits of the substantial gains forecast for the Propane industry.

DOWNTOWN IRON WORKS
DOWNTOWN, PA.
WELDED and RIVETED PRODUCTS



Gas Cylinder Truck - Easy Handling - Saves Lawns

- ALSO FOR STOVES, BOXES, CRATES
- PNEUMATIC RUBBER TIRES AVAILABLE NOW

An all purpose, one man truck for moving both cylinders and appliances. No more back-breaking lifting, either. Tapered body gives operator ample room between handles. Cradle construction accommodates any size cylinder up to 100 pound capacity. Wide Bottom flanges give support for appliances. Web strap (optional) holds appliance rigidly. Rounded handle grips permit skidding from end of delivery truck. Time saving, labor saving, cost cutting. Available now.

Write for prices and folder.



THOMAS
TRUCK
& CASTER
COMPANY

4505 Mississippi River, Keokuk, Ia.

BUTANE-PROPANE News

Zenith Optical Co., of Huntington, W. Va., where he held the position of machine shop superintendent. He comes to the Hoyt company with many years of experience in production and production design.

The Dearborn Stove Co., Chicago, recently purchased a factory at Dallas, Texas. The building has approximately 30,000 sq. ft. of floor space, and is located on six acres of land. The address is 1700 West Commerce St., on the road to Fort Worth.

This plant will be operated as a branch of the Chicago company, which will continue to produce gas burning space heaters in Chicago. Preparations are now being made to manufacture gas heaters in the Dallas plant just as soon as restrictions on materials will permit.

Robertshaw Thermostat Co., through its president, John A. Robertshaw, announces the appointment of W. D. Crouch as general manager of the commercial and industrial division of that company.

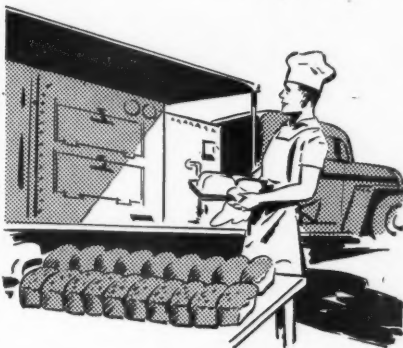


W. D. CROUCH

Mr. Crouch will make his headquarters at the main office at Youngwood, Pa., where he will have the advantages of close contact with sales, research, engineering and production. It is believed that this step will be beneficial to the handling of regular business and will advance the application of thermostats to many new products and industries.

Mr. Crouch has been associated with

SINCLAIR LP-GASES SERVE WITH THE ARMED FORCES



Not all, of course, but many of the practices and products adopted for war were first proved practical in peacetime pursuits, such as LP-Gases for cooking and heating. On farms, in urban communities and near defense plants, Sinclair LP-Gases brought comfort and convenience of these modern fuels to countless homes.

Today, America's fighting forces enjoy the health-giving, appetizing benefits of wholesome well-cooked food. In army camp and field kitchen, fuel problems are solved, valuable provisions and time are saved with Sinclair LP-Gases. And in defense plants, in repair depots and maintenance shops these fuels are serving Uncle Sam efficiently, dependably.

SINCLAIR PRAIRIE OIL COMPANY

Liquefied Petroleum Gas Division

Sinclair Bldg.

Tulsa, Oklahoma

Bu-Pro-Fire

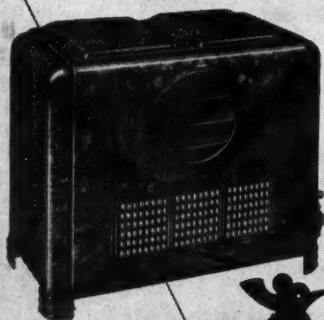
Gas Heaters

A GOOD NAME TO REMEM-

BER FOR GREATER HEATING

EFFICIENCY WITH LIQUE-

FIED PETROLEUM GASES.



DESIGNED ESPECIALLY
FOR L. P. GASES

S TENNESSEE ENAMEL MFG. CO. **3**
NASHVILLE 9, TENNESSEE

the Robertshaw Thermostat Co. since 1918 and is a recognized authority on the subject of temperature control. His new assignment will include the supervision of advertising and sales promotion in the commercial field and the preparation of manuals and educational activities for utility and dealer sales and service men.

At the same time, it was announced that Joseph L. Gabris, formerly of the St. Louis division of the Robertshaw Thermostat Co., has been appointed district manager with headquarters at 30 Church St., New York. He will be in charge of sales of domestic as well as commercial and industrial thermostats in the Eastern district.

G. M. Rohde, Jr., has rejoined the Ruud Manufacturing Co., Pittsburgh, as assistant to the president, R. H. Lewis, and will be in charge of special assignments.

Standard Oil Co. of Kentucky has announced the election of W. G. Violette to succeed W. E. Smith, retired, as president of the company.

Fuel Oil Rations Increase For Summer Months

Additional fuel oil rations for heating water during the summer period will again be available this year under special conditions announced April 7 by the Office of Price Administration.

The additional rations will be issued to eligible persons in any area except the Pacific Northwest. Because of uncertain supply conditions in the Pacific Northwest, hardship rations for hot water will be granted there only if the Regional Administrator for the area rules that there is enough oil on hand to grant the extra allowances.

Manufacturers of New Items Must Fix Own Ceilings

The consumer durable goods price regulation was altered April 17 to require a greater amount of automatic pricing by manufacturers of most such goods, the Office of Price Administration has announced.

After April 21, 1945, effective date of the action, an established manufacturer with a new item ready for the market must compute his own ceiling by reference to legally established prices for comparable items manufactured by him, even though the comparable items are no longer currently being sold, OPA said.

This widens the coverage of the third, or "comparable item", pricing method provided in the regulation. The ceiling so computed is filed with OPA for review 15 days before the new article is sold, but automatically goes into effect if not disapproved by the agency.

Heretofore, unless comparable items were currently being sold by the manufacturer he was required to apply to OPA to set a ceiling on the new article, the procedure under the fourth pricing method provided by the regulation.

The action was taken because many manufacturers are now producing articles more closely resembling those they produced in March 1942, base month for the price freeze, or in the months immediately following, than any they are currently selling.

Eligible Marketer Defined In Regulation 88 Revision

Amendment 26 to Price Regulation 88, effective April 7, makes the following change:

It redefines the standards which are essential to a person having or being granted the status of eligible broker or marketer.



**New
PORTABLE
MODEL**

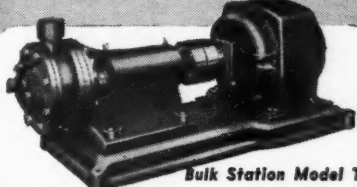
Portable Model MXT

DAYTON-DOWD

BUTANE PROPANE PUMPS

Turbine-Type

(Not Rotary . . . Not Centrifugal)



Bulk Station Model T

THE NEW, portable MXT pump can be carried onto consumers' premises. Light — yet rugged. Fills 100 lb. cylinders in only 6 minutes and develops differential pressures up to 80 lbs.

ONLY ONE MOVING PART — the impeller which is hydraulically and dynamically balanced. Longer service life.

LOW PRESSURE STUFFING BOX minimizes leakage and packing troubles.

OTHER D-D MODELS—Model T, illustrated above, for all bulk station transfer duties. Available in capacities up to 100 G.P.M. and for differential pressures up to 100 lbs.

Model XT, not illustrated, for truck mounting. V-belt pulley for drive from power take-off. Develops differential pressures up to 150 lbs.

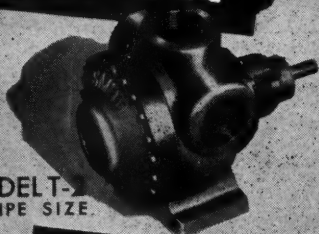
WRITE US about your LPG handling problems. Give capacity and pressure requirements, if known.

DAYTON-DOWD CO.

QUINCY, ILLINOIS

CENTRIFUGAL and TURBINE PUMPS

SMITH



MODEL T-2
2" PIPE SIZE

BUTANE-PROPANE PUMPS Capacity 50 GPM

MODEL T-2 is designed for average Tank Truck service. Has capacity of 50 gpm when connected to truck transmission power take-off shaft at 500 rpm.

SPECIAL FEATURES

- **EASE OF INSTALLATION** . . . Four outlet ports. Simplifies piping.
- **NO HAZARDOUS LEAKS** . . . Simplified fluid sealed packing box assures perfect seal.
- **MINIMUM WEAR** . . . Balanced gear construction permits efficient operation without lubrication.
- **HIGH PRESSURE CAPACITY** . . . Rugged construction, 250 lbs. working pressure. Ample pressure for fast transfer and bottling service.
- **SMALL SIZE** . . . **LIGHT WEIGHT.** Length 16-in., width 10-in., wt. 90 lbs.

Larger and smaller capacity models for Tank Truck mounting or direct-connected electric drive.

WRITE FOR FULL INFORMATION

SMITH

Precision Products COMPANY

1135 Mission Street
South Pasadena, Calif.

Amendment Redefines New And Used Motor Vehicles

An amendment of March 20 to Directive 36 redefines new and used commercial motor vehicles.

New vehicles are those which have been manufactured subsequent to July 31, 1941, and have not been transferred to any person other than a sales agency for resale purposes. Used vehicles are those which, irrespective of mileage, have been used at any time for any purpose other than sale.

In addition, rationing of used as well as new commercial motor vehicles must now be made pursuant to standards of the Director of ODT.

The direction does not limit the authority of the Director under Directive 21 with respect to the allocation of the use of rubber-borne transportation equipment and facilities by carriers or operators.

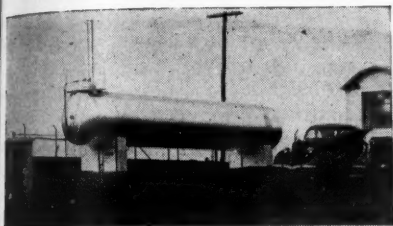
ODT Issues Instructions For New Truck Applications

The ODT Allocation Section of the Highway Transport Department has reissued a 16-page pamphlet summarizing present procedure and furnishing complete instructions to applicants relative to the rationing of new commercial motor vehicles pursuant to General Order ODT 44.

Superseding those originally released jointly by WPB and ODT in March, 1942, these instructions set forth in detail all necessary information with regard to filling out and filing applications, the required forms, the recording and reporting requirements, and the appeal procedure.

The new pamphlet also contains the full text of General Order ODT 44 and Administrative Order ODT 27, as amended, as well as specimen

LEADERSHIP IN LP-GAS STORAGE



Bulk plant showing 15,000 gallons capacity propane tank designed, fabricated and installed by Lancaster.

Bulk Tanks — Skid Tanks
Truck Tanks
Gas Plants for Municipalities
for
Butane ★ Propane
Butane-Propane Mixtures

LANCASTER IRON WORKS, INC.
LANCASTER, PENNA.

Post-war markets with a resulting increase in competitive practices are approaching more closely every day. The far-seeing dealer knows that his success in the future trade depends upon efficient and time-saving methods in the operation of his plant.

Now is the right time to equip your plant with adequate and economical storage facilities so you will be ready to ride the crest of the wave to LP-Gas profits.

Lancaster stands prepared to offer you the results of years of experience in the design, fabrication and erection of complete bulk plants. This highly specialized knowledge is yours for the asking. You will be the winner in properly designed, trouble-free, durable LP-Gas storage.

Complete proposal drawings and estimates will be submitted to you gladly and without obligation. Send us your inquiries today for prompt attention.

*when you think of
L.P. Gases think of*

Standard FLAMO . . . Sold in cylinders for Industrial, Commercial and Domestic uses.

Standard PRO-GAS and BU-GAS . . . delivered in bulk through Standard of California Distributors.

CALOL INDUSTRIAL GAS No. 1 . . . Supplied to gas companies for use in manufacture of gas distributed through gas mains.

STANDARD OF CALIFORNIA

VIKING . . . The Pump Specially Built for Butane and Propane

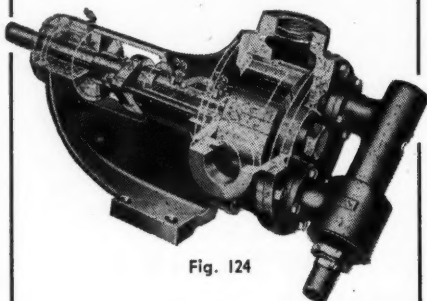


Fig. 124

10-18-35-50-90-200-300 GPM CAPACITIES

Far more rotary pumps are built in the Viking design than any other. It is the approved style.

Viking Pumps are specially built in sizes from 1/2 to 1050 GPM for handling all types of petroleum products, ranging from 100 octane gasoline and butane to lubricating oils and greases.

For complete information about Viking Pumps widely used in the butane-propane industry, write for Bulletin Series 2300. It's free and will be sent to you by return mail.



VIKING PUMP COMPANY
CEDAR FALLS, IOWA

copies of the application form and certificate of transfer.

One of the instructions contained in the general statement, states that, when an applicant desires a new vehicle for use in connection with an extension or inauguration of service requiring prior ODT approval under General Order 17 or the issuance of a new or amended certificate of war necessity under General Order 21A, application should be made on Form CWN-1 for such prior approval or new or amended certificate at the same time as, or preferably before, the filing of the application for the new vehicle.

It is further stated that, unless the CWN-1 form is filed, the ODT district manager will give no consideration to and will dismiss the application for the new vehicle, and no appeal will be allowed in such instances.

A copy of the revised instructions, "Rationing of New Commercial Motor Vehicles—Trucks, Truck-Tractors, and Trailers," may be obtained from Office of Defense Transportation, Highway Transport Department, Washington 25, D.C.

Used Materials Come Under Same Rule as New Ones

Interpretation 13 to Priorities Regulation 1, issued March 27, rules that every WPB order and regulation applies to materials and products in used or second-hand form to the same extent as to new items, unless expressly stated otherwise.

This holds even though an order does not specifically define the material which it covers so as to include used or second-hand material. On the other hand, when a definition specifies "new" materials, used materials are not covered even though the order does not specifically exclude them.

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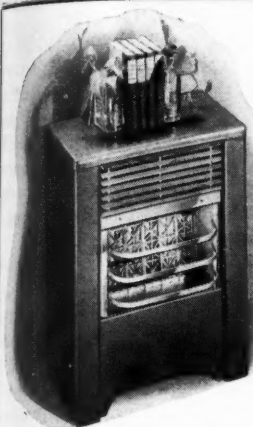
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E News



DEARBORN

WORLD'S FINEST... SAFEST

L.P.G. GAS HEATERS

A complete line of Vented and Unvented Quality heaters. Their Ultra Smart Appearance, Outstanding L.P.G. Performance and many Exclusive Features create unprecedented user enthusiasm. You are assured satisfied customers and decidedly lower service costs when you sell this fine line.



BUT.
PRO.
MIX.

NAT.
MFG.
GAS.

FEATURES THAT SELL

A.G.A. Approval, Hi-Crown Burners, Automatic Lighting, Syphonaire Chassis, and Air Insulated Cabinets are features your customers want. Finer -Safer heaters, yet priced unbelievably LOW. Write for literature.

FAMOUS HI-CROWN BURNER

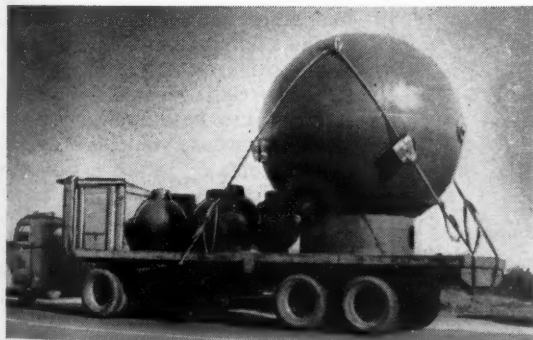
BLUE FLAME PILOT LIGHT

Leading L.P.G. Distributors from coast to coast rate it the finest of all burners for Butane. It "performs" without coaxing, constant cleaning or adjusting. Its quiet, odorless operation, great flexibility and reserve capacity insures your customers being completely satisfied.

DEARBORN STOVE CO.

3256 Milwaukee Ave.
CHICAGO, ILL.

3625 S. Grand Ave.
LOS ANGELES, CALIF.



LARGE or SMALL SPHERICAL And CYLINDRICAL PROPANE TANKS

A 5000 gallon spherical storage and five 115 gallon spherical domestic tanks on the way to the consumer. Built by the

Superior Tank & Construction Co.

6155 SOUTH EASTERN AVE.

PHONE ANGELUS 4157

LOS ANGELES, CALIF.



GAS EQUIPMENT CO., INC.
2620 South Ervay Street, Dallas, Texas
GAS EQUIPMENT SUPPLY CO.

BUEHLER

Tank and Welding Works

Manufacturers of Tanks,
Welded and Pressed
Steel Products

5000 Pacific Boulevard
LOS ANGELES 11, CALIFORNIA

Carlsbad, Calif., Dealer Will Serve Motor Fuel

A new service station equipped to serve either butane or propane is now open for business in Carlsbad, Calif. Operating under the name Triangle Liquid Gas Co., the new station is located on Highway 101 at the overpass near the north end of the town.

Open for business 24 hours each day, the owners are equipped to give complete service to anyone legally operating on butane or propane. Facilities include a 6000-gal. propane storage and 3,000-gal. butane storage, electric pump and all equipment necessary to service cars or trucks.

C. Roy Workman is owner of the station. Frank H. Workman is manager.

Double Propane Trailers Must Have Automatic Brakes

Emergency wartime ordinance permitting the use of double trailers by companies hauling propane gas used in the manufacture of artificial rubber, became effective throughout Los Angeles (Calif.) county recently.

Under the board order only those companies whose vehicles are equipped with automatic braking devices will be permitted to use trailers drawn by trailers, it was announced.

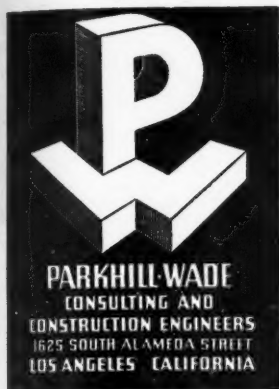
Commercial Cooking Equipment Makers Must File Quarterly

An amendment of March 27 to L-182 provides that all manufacturers of commercial cooking and food and plate warming equipment must now file quarterly reports on Form WPP-1509.

Previously only manufacturers holding an inventory of such equipment were required to file the report.

Refineries and Plants

For Recovery of
Isobutane
N-Butane
Propane



PARKHILL-WADE
CONSULTING AND
CONSTRUCTION ENGINEERS
1625 SOUTH ALAMEDA STREET
LOS ANGELES CALIFORNIA

*For Safety
and Economy*

ETHYL MERCAPTAN

—Purified—

The **ACCEPTED**
standard
odorant
for liquefied
petroleum
gases.

**MALLINCKRODT
CHEMICAL WORKS**

ST. LOUIS

NEW YORK

*Indispensable
in dispensing*
LIQUEFIED PETROLEUM GAS

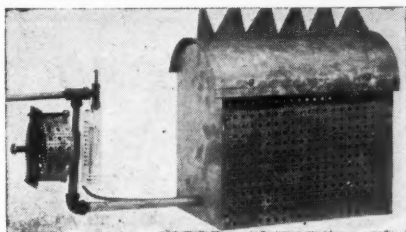


BRODIE METERS

RALPH N. BRODIE CO., INC.

913 - 61st Street, Oakland (8) California • Cable Address:
"Brodico" • Division Offices: Chrysler Bldg., New York City
59 E. Van Buren, Chicago • 302 South Pearl St., Dallas, Texas

Representatives and Stocks in All Principal Cities



DIX Butane - Propane HEATERS

for Sunshine Brooders

Easy to Sell

Low priced, simple in construction, the DIX heater quickly attracts the attention of any chicken raiser. It's a natural for quick sales.

Easy to Install

Light and compact the DIX heater is easy to handle and transport. Can be quickly installed with standard pipe connections. It's mechanically simple: free from service problems.

DIX MANUFACTURING CO.

3447 E. Pico Blvd. Los Angeles 23, Calif.
(Export Office—80 Broad St., New York City 4)



AGA testing activities in range room following rehabilitation.

Restoration of Laboratories Is Progressing Rapidly

Physical rehabilitation of the American Gas Association Testing Labora-

tories in Cleveland is well under way according to R. M. Conner, Director. He points out that numerous preliminary steps necessary before reconstruction could be started were completed more rapidly than had first been anticipated immediately following the explosion last fall.

In spite of present shortages in materials and scarcity of labor, repairs are well advanced and are nearing the stage when the offices which were completely destroyed can be re-occupied. In the meantime temporary quarters made available through the courtesy of the ASH&VE Research Laboratory have been utilized by the office staff.

In view of the extensive damage suffered by the north wing of the building, it is considered remarkable that testing and research activities have been able to be resumed on their present scale.

In addition to the offices, the range, central heating and accessory rooms, as well as the chemical laboratory, were all very severely damaged. With the exception of certain test and inspection records, correspondence and other files were completely destroyed.

KEEP TUNED TO BRILLIANT FIRE LP-GAS HEATERS IN 1945

Write for Latest Bulletin

THE OHIO FOUNDRY & MFG. CO.
STEUBENVILLE, OHIO

"Quality Heating Equipment Since 1846"





The New, Modern
**ROYAL ROSE
GAS RANGE**

Beautifully streamlined, sturdy steel construction, all white porcelain finish. Designed for superior performance in tomorrow's kitchen.

Write for Details

J. ROSE & CO., INC.

68 Jay Street

Brooklyn 1, N. Y.

Wait!
for LP-Gas
Carburetion
by DIX

In the expansion period after the war, when the automotive industry will be looking for something "new" in butane-propane power, your best bet will be DIX LP-Gas Carburetion Unit. It will pay to WAIT for something NEW.

¿Han probado ustedes BUTANE como combustible? En caso que no, escribanos.

DIX MANUFACTURING CO.

347 E. Pico Blvd. Los Angeles 23, Calif.
Export Office—80 Broad St.,
New York City 4

**Bottled Gas
CABINETS**

Hood-type as well as full size. Well built of heavy metal with protective coating of paint, or galvanized. Thousands of installations giving satisfactory service. Write for details and prices.

**Liquid Propane
Vaporizer**

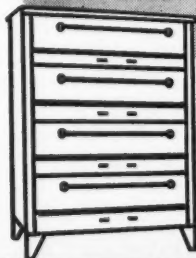
Installs OUTSIDE tank. Always accessible. Insures vaporized gas in any weather. Write for details and price.

**The Oxford
Company**

Oxford

Pennsylvania

Heat-Controlled
**BAKING GIVES
BETTER RESULTS
at lower fuel cost**



**Helps Build
Profitable
LPG Loads**

ROBERTSHAW
THERMOSTAT COMPANY

Youngwood, Pa.

COMMERCIAL & INDUSTRIAL DIVISION



CLASSIFIED

Classified advertising is set in 6-point type, without border or display, at the rate of 10 cents per word per insertion; minimum charge per insertion \$2. Box numbers for replies count as 5 words. Count as a word each one letter word and each group of figures. Classified advertising is only accepted when payment accompanies order. Copy and payment must reach publisher's office prior to 10th of month preceding publication.

HELP WANTED

SALES ENGINEER WANTED. A NATIONALLY known Ohio Manufacturer of accessories for the Butane-Propane industry desires the services of an experienced sales engineer to assist in the development of this fast expanding business. Should have both an engineering and a sales background. Write in confidence, giving experience, education, age and salary expected. At present the Company is engaged in AAI war production. Box 600, BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, California.

SITUATIONS WANTED

MAN WITH 14 YEARS PROPANE EXPERIENCE desires managerial connection with Wholesale or Retail Distributor in East. Capable of active management with complete knowledge of equipment and appliances. Willing to make nominal investment. Write Box 575, BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, California.

VETERAN, 31 YEARS OLD, 7 YEARS EXPERIENCE as service man for bottle gas industry before the war, now employed for stove manufacturer in National Service handling all range complaints from the field, would like employment in the bottle gas industry as a field service representative for a reputable manufacturer of LP-Gas. Write Box 610, BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, California.

BUSINESS OPPORTUNITIES OFFERED

BUTANE GAS BUSINESS FOR SALE: Finest Territory in Central Texas, Large Storage Plant, Transport, 3 Delivery Trucks, Loading Racks, Office and Shops all new. Write Box 550, BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, California.

EQUIPMENT WANTED

WANTED: PROPANE, BUTANE OR 7-70 Cylinders, any size; cylinder valves; regulators; bulk tanks; truck tanks; pumps and controls, any size. Box 495, Syracuse, N. Y.

EQUIPMENT FOR SALE

FOR SALE: THREE 15,377 GALLON WATER capacity tanks with 126 pound W.P. These tanks have steel stands that they are setting on, equipped with loading and unloading hose. One 3300 gallon transport with 1944 K-7 International truck with approximately 38,000 miles on it. This equipment is all new except the transport tank. It was built in 1940. Gaines Butane Equipment Co., Box 1740, Okmulgee, Oklahoma.

FOR SALE: 1100 GALLON CODE PROPANE truck tank with fittings, clearance lights ready to go in Kansas. Write Box 620, BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, California.

FOR SALE: INSTANT STEAM GENERATORS, new, 1 H.P. size—\$82.72. 2 H.P. size—\$115.19. F.O.B. Portland, Maine. Utilities Distributors, Inc., P.O. Box 1937, Portland, Maine.

FREE TO WAR VETERANS

If you are a veteran of World War No. 2, you may run a "Situation Wanted" classified ad in this column three consecutive months without charge.

Send in your copy!

No Expansion Possible Even After V-E Day, Says PAW

There will be no increase in the supply of liquefied petroleum gases for home use with the end of the war in Europe nor will home owners be permitted to make any new installations for the use of these gases with the conclusion of hostilities in Europe, Deputy Petroleum Administrator Ralph K. Davies announced April 23.

The increased demands upon the liquefied petroleum gas industry in connection with the war in the Pacific preclude easing of restrictions.

Controlled Materials Form Revised by WPB

WPB-3320, the form used to apply for special permission to sell surplus controlled materials under Priorities Regulation 13, has been issued in slightly revised form.

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PROPANE
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BUTANE-
Los An-

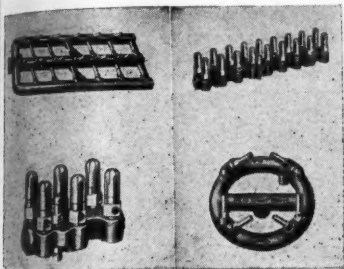
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E News



BARBER Appliance Burners

We make many types of Burner Units to fit a wide range of gas appliances. Nearly 200 appliance makers use Barber Burners. All Barber units currently designed and equipped with proper jets to suit the appliance. Barber is the ONE burner which assures complete combustion on Butane-Propane or ANY OTHER gas. Appliance builders and fuel distributors give their customers better service, more economy, by advising the use of Barber-equipped appliances. Submit your burner problems to us. Complete new Catalog on request.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland, Ohio

*Write for Information
on
Post War Delivery of*

Utility

GAS SYSTEMS

Quotations on any type or size pressure vessel to meet your specifications.

We specialize in truck and transport tanks.

Butane Equipment Co., Inc.

Box 1451

DALLAS

TEXAS

"KEEP 'EM FRYING"
Use PITCO

Fryalators

REG. U.S. PAT. OFFICE

SAVE FAT . . . GAS . . . SPACE

Deep-Fat Frying at Its Best

- ★ Customers can serve a wider variety of fried foods.
- ★ Left-overs or by-products quickly converted into daily specials.
- ★ Increase in customer business means increase in the gas load.
- ★ Actual saving in fat alone more than pays total cost of gas required to operate them.

J. C. PITMAN & SONS
SALES CORP.

711-719 Broad St. West Lynn, Mass.

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UNITED STATES
Automatic Water Heaters
Are Made to Last!

DEPENDABLE
ECONOMICAL
A.G.A. APPROVED

Order the "QUALITY LINE"
and SAVE!



**UNITED STATES
HEATER CO.**
COMPTON, CALIFORNIA

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